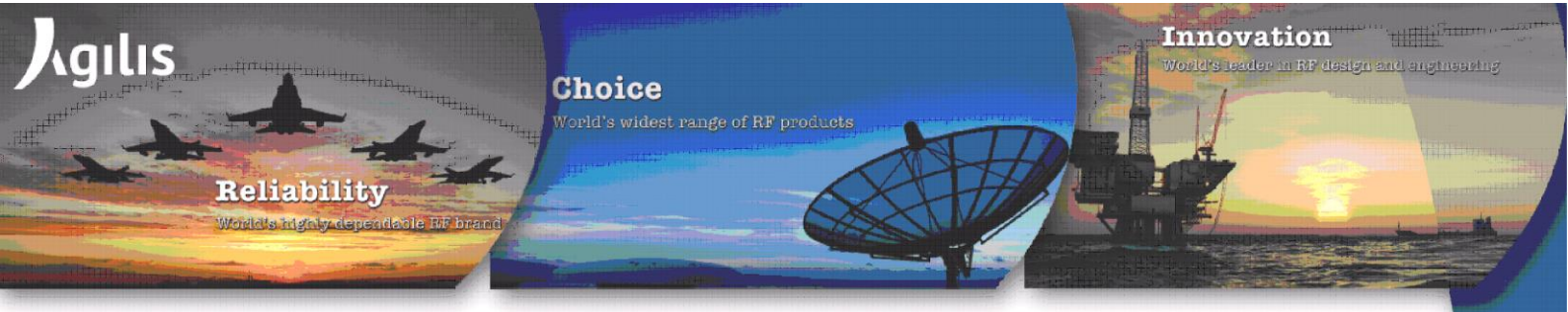

AUC68 Ku-Band Up Converter

Installation and Operation Manual
IM02960229 Rev. A

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Chapter 1 Product Overview

Agilis, a global leader in the design, development and manufacturing of quality satellite products for various applications, introduces the new generation of the AUC68 Series Ku-Band Up Converter.

This user manual provides detailed information to system integrators and end users on how to set-up, operate and maintain the AUC68 Series Rack Mount Converters.

1.1 About The Ku-Band Converter

The Agilis AUC68 Rack Mount Ku-Band Up Converter is a high performance, reliable and compact RF indoor subsystem. The Up converter converts IF/L-Band to Ku-Band. Full monitoring and control is provided locally through an LCD panel on the front of the unit or remotely through a PC using the Agilis EMS Software, HTTP/WebUI Ethernet interface and SNMP.

1.2 Converter Functions

This section explains the design and functions of the AUC68 Converter.

1.2.1 Converter Functional Block Diagram

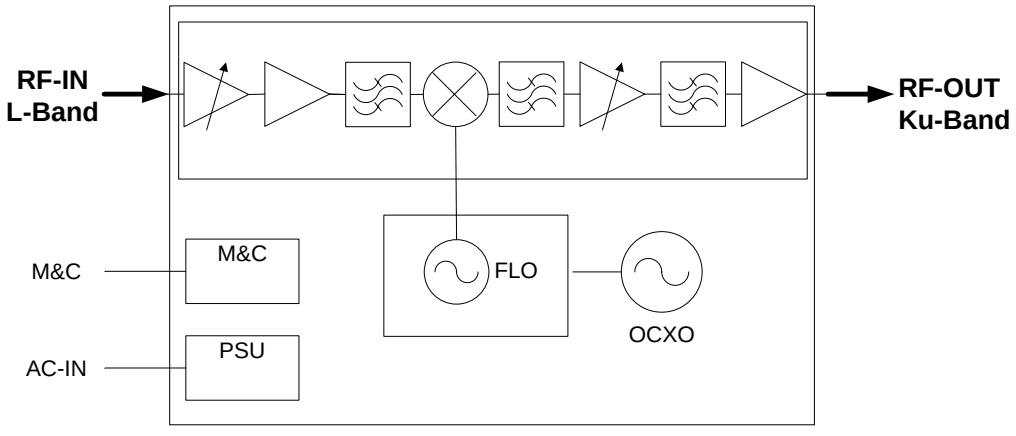


Figure 1.1 AUC68 Series Up Converter functional block diagram

1.2.2 Frequency Bands

Table 1-1 AUC68 Series Up Converter Frequency

AUC68 Series Up converter	Input Frequency (MHz)	Output Frequency (GHz)	LO Frequency (GHz)
L-Band to Ku-Band	950 ~ 1700MHz	13.75 ~ 14.50GHz	12.80GHz

1.2.3 AUC Up Converter

The Ku-Band Up Converter converts the L-band signal to Ku-Band by mixing the RF signals with a fixed LO signal. There is a variable digital attenuator in the up conversion path for user to control the output power level. This can be done using the front panel or M&C software and are in steps of 0.5 dB over a 20 dB adjustment range.

1.2.4 Synthesizer

LO signals for the AUC68 Series Converter are generated by the Phase Locked Loop (PLL) synthesizers. The AUC68 Standalone Ku-Band Converters' PLL synthesizers are referenced to a highly stable 10MHz oven-controlled crystal oscillator (OCXO) with very low phase noise and high stability.

1.2.5 Monitor & Control

The monitor and control is provided through the front LCD control panel. This is a micro-controller based sub-system that monitors and controls the operations of the converter. Full monitoring and control via RS485/RS232 protocol can also be done remotely through a PC using the Agilis EMS Software, HTTP/WebUI Ethernet interface or SNMP.

The M&C enables the user to:

- Control the Converter operations.
- Adjust attenuation (0.5dB over a 20dB adjustment range).
- Turn the RF power on/off.
- Obtain RF parameters (RF output power) and temperature.
- Check the alarm status.
- Control the redundancy module.
- Obtain information about the Converter such as serial number and part number etc.

1.2.6 Redundancy System

The AUC68 Series Converter is redundancy ready and will self determine the primary and secondary unit. The configuration for the AUC68 Converter 1:1 System uses the Agilis Multi-switching unit (AMSU68). Two identical AUC68 Series Converters along with an AMSU68 multi-switching unit are included in a redundancy system package. The online AUC68 converter operates while the secondary AUC68 converter remains on offline. Switching takes place if a fault occurs in the online AUC68 converter.

1.2.7 Power Supply System

WARNING: Please ensure that the power source is turned OFF before connecting the power cable from the power source to the Converter unit.

The AUC68 Series converter is powered via an external AC power source (90 VAC – 264 VAC range). Internal AC-DC converters convert the AC power received into the DC voltages required by the various modules within the Converter. The pin-out configuration for the Converter's AC connector is given in the table below.

Table 1-2 Converter's AC IN pin-out configuration

Pin #	Function
E	Earth
P	Live
N	Neutral

The internal AC-DC converter receives AC power and converts it to DC voltages which are then supplied to the various internal modules and cooling fans. This power supply is compact, reliable and is adequately adjusted for safety, EMC and EMI.

The internal DC voltages required within the unit includes:

- +15.5V DC and +5.5V DC voltages that provides power to the M&C, OCXO, and converter modules.
- +12V DC to the fan and LCD control panel.

1.3 Converter Interfaces

1.3.1 AUC68 Series Converter Front View

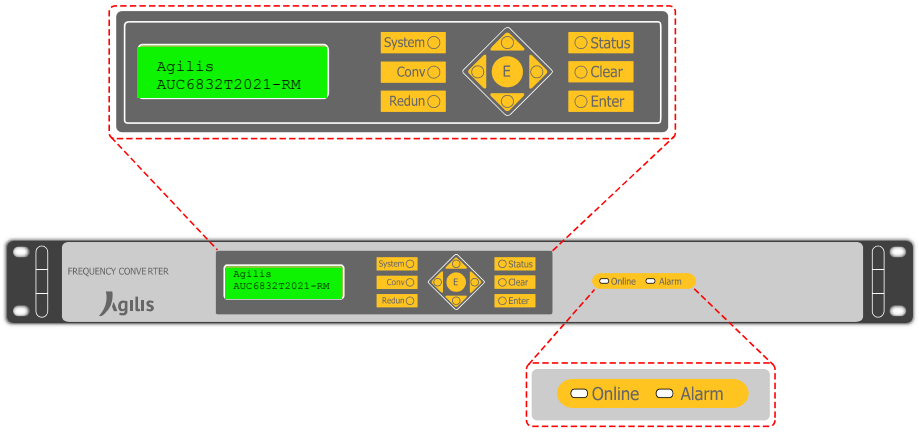


Figure 1.2 Front panel of the AUC68 Ku-Band Converter

Table 1-3 Interfaces present on the front of the Converter unit

Interface	Type	Description
Control Panel	LCD Display Menu Buttons	M&C user interface
Online	LED	Online/ Offline status indicator
Alarm	LED	Alarm indicator

Table 1-4 Online and Alarm LED indications

LED Indicator	LED Status	Explanation
Online	GREEN	Indicates that redundancy is set to Auto or Manual and there is no major alarm in the unit.
	Off	Indicates that redundancy is set to Auto or Manual offline mode and there is a major alarm in the unit.
Alarm	RED	Indicates faulty condition.

🕮 Note: The Alarm LED indicator on the front panel will be RED when a fault is detected in the unit. The alarm will be triggered by an unlock condition of the LO and/or a high temperature within the unit. Please refer to the Status Menu Parameters to view the alarm conditions of the unit.

1.3.2 AUC68 Series Converter Back View

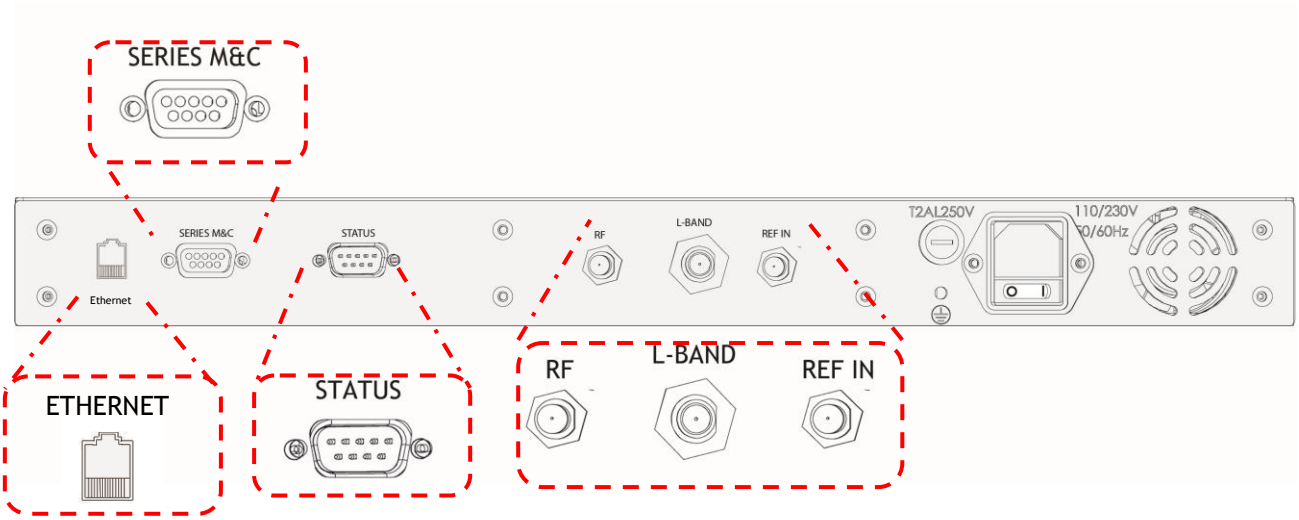


Figure 1.3 Rear panel of the AUC68 Ku-Band Converter

Table 1-5 Interfaces present on the back of the Converter unit

Port Reference	Connector Type	Signal Details
Ethernet	RJ45	Ethernet
Series M&C	DB9 Female	RS485/ RS232
Status	DB9 Male	Status signal
L-band	50 Ω Female N-Type	Input signal
RF	50 Ω Female SMA	Output signal
REF IN	50 Ω Female N-Type/BNC	10MHz external reference
AC IN	3-pin connector with On/Off rocker switch	AC 230V voltage
FUSE	Fuse holder	This is an AC fuse holder with a 2 Amperes fuse inside to protect the converter from surge current.

The table below describes the pin and wire connection for the various connectors of the AUC68 Series Frequency Converter:

Table 1-6 Pin-out configuration for M&C

Pin #	Function
Pin 1	RS485-
Pin 2	Tx RS232/ RS485+
Pin 3	Rx RS232
Pin 4	Reserved
Pin 5	Ground
Pin 6	Reserved
Pin 7	Reserved
Pin 8	Reserved
Pin 9	Reserved

Table 1-7 Pin-out configuration for Status

Pin #	Function
Pin 1	Reserved
Pin 2	Reserved
Pin 3	Common
Pin 4	NC (short to Pin3 without alarm)
Pin 5	NO (short to Pin3 with alarm)
Pin 6	Ground
Pin 7	4V~5V
Pin 8	0V~0.5V
Pin 9	Reserved

Table 1-8 Pin-out configuration for AC

Pin #	Function
E	Earth
P	Live
N	Neutral

1.4 Product Models and Optional Components

Table 1-9 Product series models

Model Type	Model #
AUC68 Up Converter	AUC6832T2021-RM
AUC68 Series Ku-band Up Converter	AUC683xxxxx-x-xx
AUC68 Series Ku-band Up Converter	AUC685xxxxx-x-xx

Chapter 2 System Configurations

This chapter explains the system configurations in which the Converter is deployed in and its various components.

2.1 Types of System Configurations

Each Converter unit can be deployed in different system configurations including:

- Stand-alone
- 1:1 Redundancy System using the AMSU68

2.1.1 Standalone Configuration

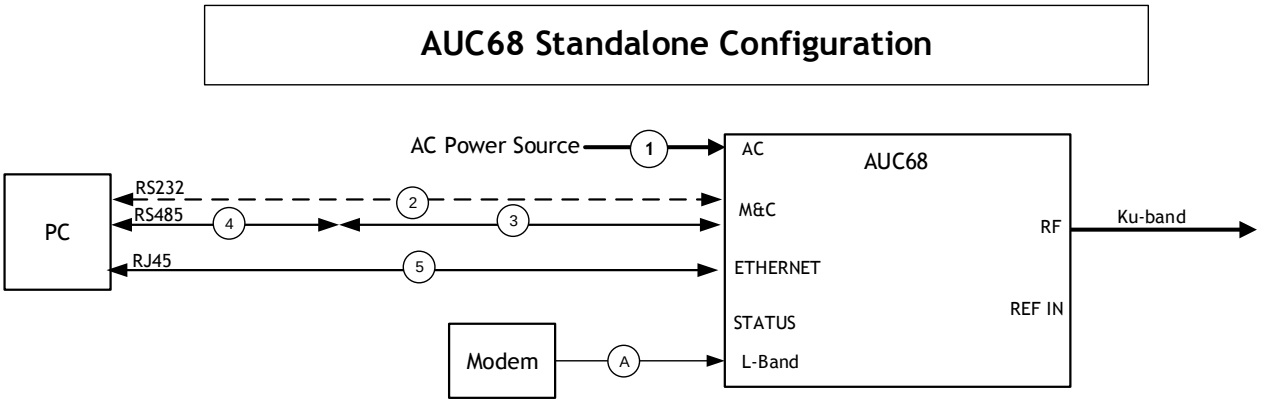


Figure 2.1 AUC68 Converter Standalone Configuration

Table 2-1 List of accessories and components for standalone system

Item	Part No.	Description	Length	Qty
1	6202040064G	Power Supply Cable	2m	1
2	6202040065	C/A 9P D-SUB/M to 9P D-SUB/F (optional)	3m	1
3	2502040680	C/A USB to RS485 CONVERTER (optional)	-	1
4	6103480008	Converter RS485 to USB (optional)	-	1
5	-	Ethernet RJ45 Cable	To be arranged by customer	
A	-	RF Cable		

🕮 **Note:** The table above is a typical accessories list for the Converter. Depending on your purchase order, your Converter package may not include certain optional cables. Please contact Agilis if you wish to purchase any of the above accessories.

2.1.2 AUC68X 1:1 Redundancy System Configuration using AMSU68

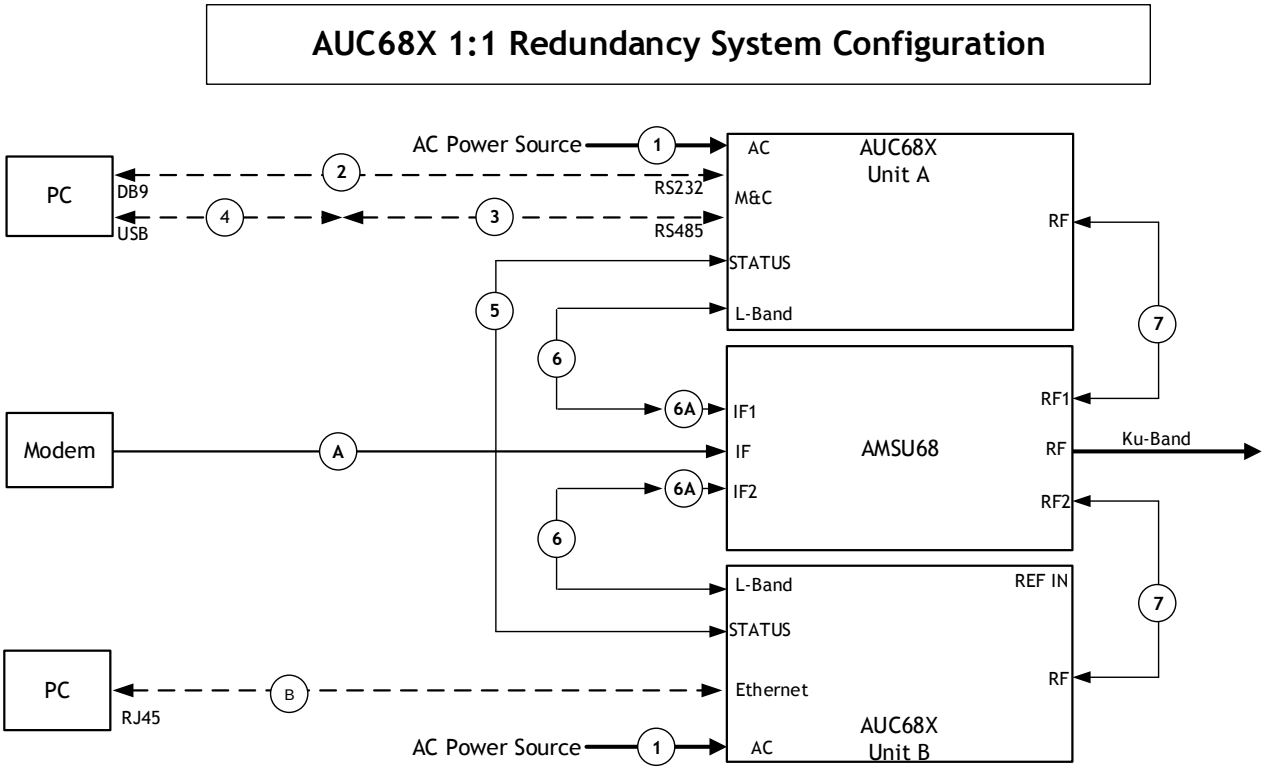


Figure 2.2 1:1 Redundancy System Configuration

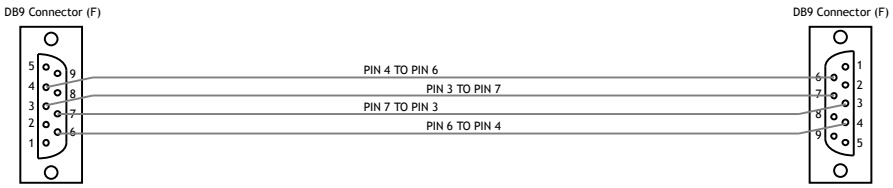


Figure 2.3 Status cable pin connections

Table 2-2 Interfaces list for the AMSU68

Label	Connector Type	Impedance
RF	SMA Female	50 Ω
RF1	SMA Female	50 Ω
RF2	SMA Female	50 Ω
IF	N-Type Female	50 Ω
IF1	N-Type Female	50 Ω
IF2	N-Type Female	50 Ω

The table below lists the accessories and components that can be obtained from Agilis to setup the system.

Table 2-3 List of accessories and components for the Redundancy System

Item No.	Agilis Part No.	Description	Length (m)	Qty
1	6202040064G	Power Supply Cable	1	2
2	6202040065	C/A 9P D-SUB/M TO 9P D-SUB/F 3M (optional)	2	1
3	2502040680	C/A FOR USB TO RS485 CONVERTER KIT (optional)	2	1
4	6103480008	Converter RS485 to USB (optional)	1.5	1
A	-	RF Cable	To be arranged by customer	
B	-	Ethernet RJ45 Cable		
5	2502041031	C/A RS232 DB9 (female to female)	0.5	1
6	2502041019	C/A N-type male to SMA male	0.25	2
6A	5703660011	Adaptor N-type male to SMA female	-	2
7	2502040892	C/A Splitter to PM Ku-Bd 80W	0.25	2
-	AUC68XXXXXX-RM	AUC68 Converter	-	2
-	AMSU6812ABSN-RM	Ku-Band Multi Switch Unit	-	1

🕮 **Note:** The table above is a typical accessories list for the Converter. Depending on your purchase order, your Converter package may not include certain optional cables. Please contact Agilis if you wish to purchase any of the above accessories.

2.1.3 1:1 Redundancy System Setup using the AMSU68

- Connect the cables according to the diagram shown in Figure 2.1 1:1 Redundancy System Configuration.
- Set the frequency and attenuator level accordingly.
- Set both AUC68 units output to be “ON” and redundancy mode to “AUTO”.
- Upon power on, the unit that is ready first will be the primary unit. The online unit is indicated by the green Online LED on the front panel. The Online LED indicator of the offline unit will be turned off while on standby.
- The operating unit can be switched to the other unit by setting the redundancy mode on the primary unit to “Offline” manually. Do ensure that the redundancy mode is set back to “AUTO” when in operation.
- An alarm on the online unit will trigger the offline unit to turn on. The standby unit will switch to online when AC power of the primary unit is off, primary unit LO is unlocked, and when there is a Temperature alarm on the primary unit.

Chapter 3 Installation

This chapter provides all the necessary information and step-by-step instructions for the successful installation and operation of the Agilis Converter.

WARNING: Always handle the Agilis product with care. Dropping or knocking it may cause damage to the unit. Agilis' warranty does not extend to defects due to excessive shock or vibration.

3.1 Unpacking the Box

Before unpacking the box, check if it had been damaged or opened. If the shipment may have been tempered with, open the box in front of a representative from the shipping company.

Upon opening the box, carefully remove the items in the package and check them against the packing list. If any of the items are damaged or missing, please contact Agilis or your local Agilis representative before proceeding.

We recommend that you keep the original packing materials until you have completed the checks and confirmed that the unit is in working order.

If you need to repack the product for shipping, please use the original shipping container and packing materials whenever possible. Alternatively, you may also use high quality commercial packing materials to repack the unit. Wrap the unit in a shock absorbing material to provide cushioning and prevent movement within the container. Please seal the container firmly and clearly mark **"FRAGILE Electronic Equipment"** on the exterior.

3.2 Pre-Installation Preparations

3.2.1 Power Supply

The AUC68 Converter requires an external AC power source (90V ~ 264 VAC range) on site. When selecting the AC power source to connect your unit to, please ensure that the voltages are within the limits specified below. You are recommended to use an Automatic Voltage Regulator or UPS if your power source is unstable or falls outside of these limitations.

Tolerance	230 VAC, 50Hz
Live – Neutral	100 VAC – 240 VAC
Live – Earth	100 VAC – 240 VAC
Neutral – Earth	< 5 VAC

📖 Note: The equipment may be damaged if the Neutral – Earth exceeds 5VAC. Please check your grounding setup if this occurs.

3.2.2 Site Preparation Checklist

The following table provides a checklist to help you ensure that your site is adequately equipped to perform the installation.

Checklist Item	Y/N
Equipment required for site survey	☐ Inclinometer ☐ Compass / DataScope ☐ 1-meter rectangular bar ☐ Scientific calculator ☐ 100-meter measuring tape ☐ Site location map ☐ GPS receiver ☐ Road distance wheel ☐ Vernier calliper ☐ Location markers / flags
Is site in the satellite footprint?	☐ Yes ☐ No
Approximate length of cables between ODU and IDU	
IF cable routing method	☐ Underground ☐ Surface
Is there a clear path for cables from ODU to IDU?	☐ Yes ☐ No
Proposed mounting location	☐ Antenna structure ☐ Near the antenna ☐ Inside the shelter ☐ Other: _____
Does the mounting location provide the best route for cables from IDU to ODU to antenna?	☐ Yes ☐ No

Checklist Item	Y/N
Is there an unobstructed view from the satellite(s) of interest?	☐ Yes ☐ No
Are there any hazards near the site location that may damage or obstruct the ODU? (old buildings, trees, planned future construction)	☐ Yes ☐ No If yes, please specify: _____
Are there possible RF interferences from other nearby telecommunication towers?	☐ Yes ☐ No
Will your installation cause interference to other nearby setup?	☐ Yes ☐ No
Is sufficient power supply available?	☐ Yes ☐ No
Is grounding available?	☐ Yes ☐ No
Is the site prone to the following?	☐ Heavy wind ☐ Heavy rainfall ☐ Ice/snow accumulation ☐ Extreme temperatures ☐ Sand/Dust storms ☐ Others: _____

3.3 Installing the AUC68X Converter

All Agilis components in this system are indoor mounted equipment which can be mounted on a standard 19” rack.

Step 1 Mount the AUC onto a standard 19” rack for a standalone configuration or for a 1:1 redundancy configuration as shown in the diagrams below.

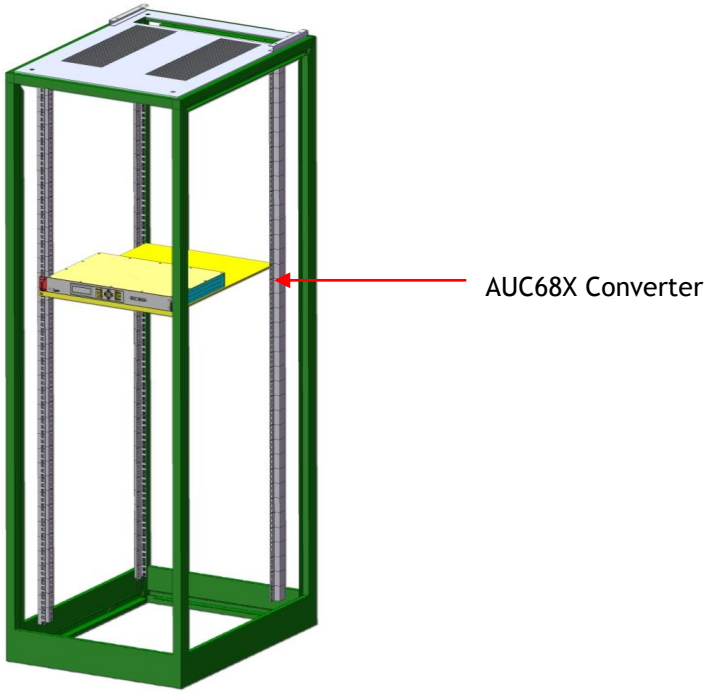


Figure 3.1 Typical mounting for a standalone configuration

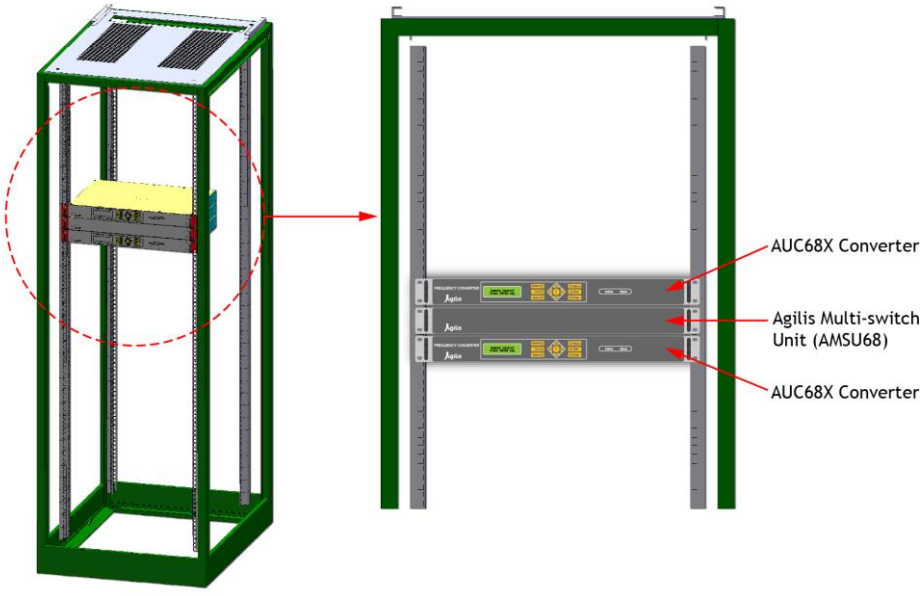


Figure 3.2 Typical mounting for a 1:1 redundancy configuration

Step 2 Connecting the AUC

FOR STANDALONE CONFIGURATION

If you are setting up the AUC in a standalone system configuration, connect the AUC to the other system components as follows:

1. Connect the M&C port of the AUC to an indoor terminal (such as a PC) using the M&C cable provided.
2. Connect the L-Band port of the AUC to an indoor modem.
3. Connect the RF port of the AUC to a BUC.
4. Connect the AUC to a 230V AC power supply using the AC power cable.

FOR 1:1 REDUNDANCY CONFIGURATION USING THE AMSU68

If you are setting up the AUC in a 1:1 redundancy system configuration, connect the system components according to the diagram shown below.

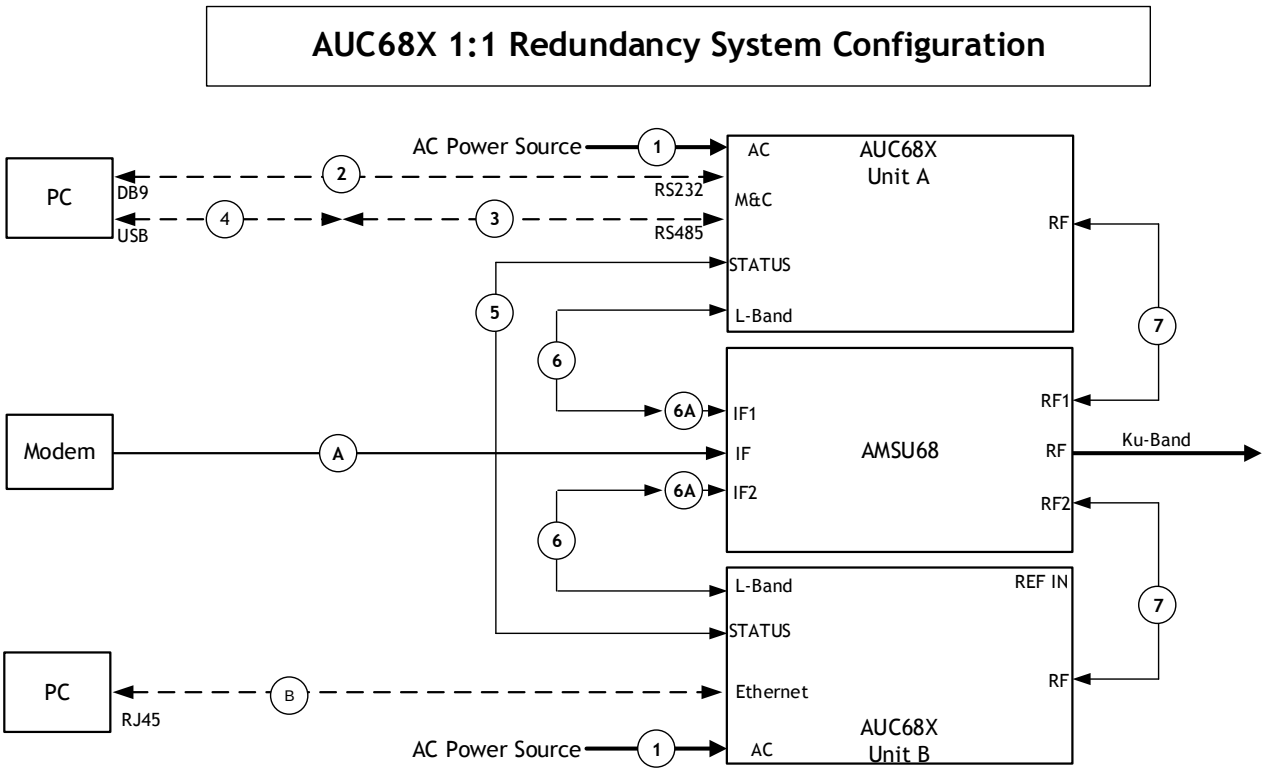


Figure 3.3 AUC68X 1:1 Redundancy Configuration using the AMSU68

Step 3 Grounding the installation

This process provides a conductive path for static electrical charges to be discharged safely from the equipment to the ground. This prevents a build-up of static charges that may cause the equipment to spark.

Step 4 Switch on the unit

Turn on the AC power sources. The AUC should power on and the LCD should display the unit part number.

Chapter 4 Set Up and Management

4.1 Monitor & Control

The AUC68 Series Converter can be monitored and controlled via various methods including:

- LCD Control Panel
- Agilis EMS Software
- Web browser (HTTP) and SNMP protocol (optional)

This chapter looks at how you can set up and manage the AUC68 Series Converter.

4.2 Using the AUC68 Control Panel

4.2.1 Understanding the AUC68 Control Panel

The front panel of the AUC68 Converter includes an LCD, command buttons, and status LEDs as shown in the figures below.

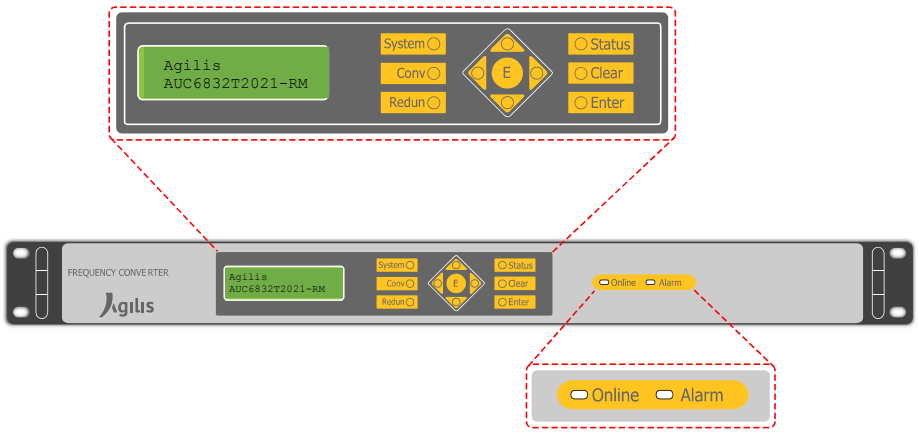


Figure 4.1 AUC68 Converter Front panel

4.2.1 Online and Alarm LED Indicators

Table 4-1 AUC68 Converter LED status indicators

LED Indicator	LED Status	Explanation
Online	GREEN	Indicates that redundancy is set to Auto or Manual and there is no major alarm in the unit.
	Off	Indicates that redundancy is set to Auto or Manual offline mode and there is a major alarm in the unit.
Alarm	RED	Indicates faulty condition.

🕮 Note: The Alarm LED indicator on the front panel is RED when a fault is detected in the unit. The alarm is triggered by an unlock condition of the LO and/or a high temperature within the unit. Please refer to the Status Menu Parameters for more details.

4.2.2 LCD and Command Buttons

The AUC68 Control Panel includes the LCD and the Command Buttons.

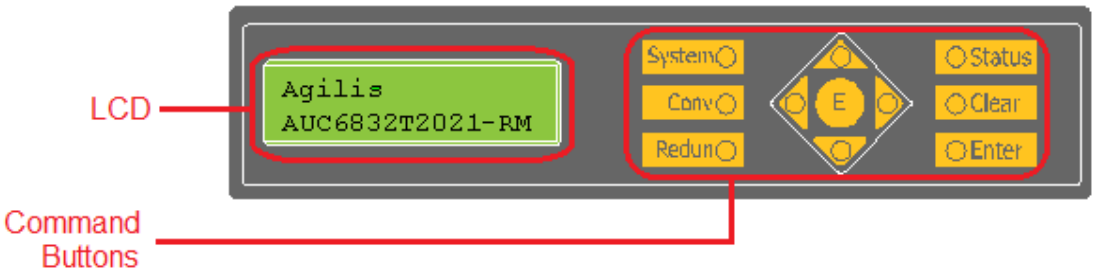


Figure 4.2 AUC68 Converter Control panel

LCD DISPLAY

The LCD (Liquid Crystal Display) provides the visual platform for the converter. This displays guides the user on how to navigate and use the AUC68 system menu tree. Various menus, options, and operating information are displayed through the LCD.

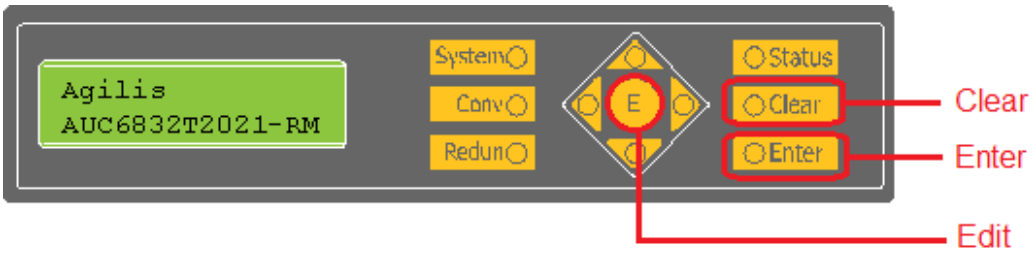
COMMAND BUTTONS

The command buttons on the keypad of the LCD display each represent a menu option that can be accessed via the display. These include:

- **[System]**: Press to view "System" functions. This menu enables the user to view or edit AUC information such as the AUC's ID, part number, serial number etc.
- **[Conv]**: Press to view "Converter" functions. This menu enables user to view and edit converter status, attenuation, output etc.
- **[Redun]**: Press to view or edit "Redundancy" functions. This menu enables user to view and edit redundancy parameters.
- **[Status]**: Press to view "Status" functions. This menu enables user to view AUC68 information including LO, temperature, IF and RF status etc.

CLEAR, ENTER AND EDIT BUTTONS

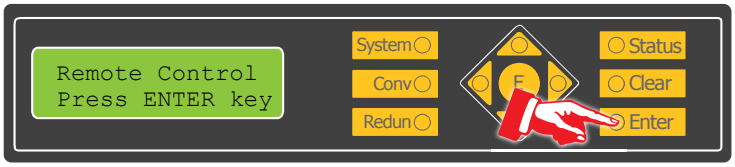
Three other command buttons are found in the AUC68 control panel. These include **"Clear"**, **"Enter"**, and **"E"** (edit) buttons.



- **[Clear]:** This button clears any unsaved configurations and returns the display to the previous level.
- **[E]:** The "E" stands for edit. This button allows you to edit configurable parameters via the LCD display.
- **[Enter]**: This button confirms and saves any changes made to any of the parameters currently displayed.

EXAMPLE: SETTING THE AUC68 CONTROL MODE

If your keypad is in "Remote" mode (that is, control via the keypad is locked), you can unlock the keypad by pressing the **[Enter]** button.



NAVIGATION ARROW KEYPAD

The arrow keypad helps you navigate the menu display on the LCD.

- Use the left and right arrow keys to move from one parameter to another.
- Use the up and down arrow keys to select the value of the parameter you are configuring.

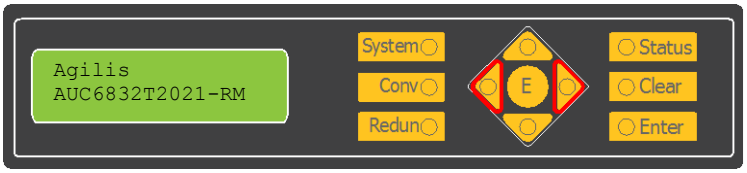


Figure 4.3 Left/ Right Navigation Keys

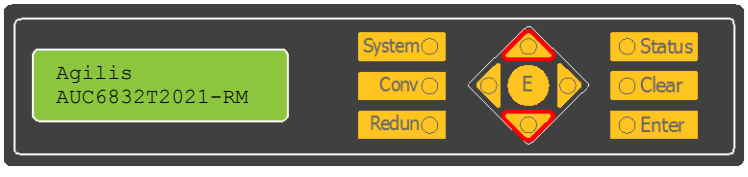


Figure 4.4 Up/ Down Navigation Keys

4.2.3 System Menu

The System menu enables the user to view or edit AUC information such as the AUC's ID, part number, serial number, and so forth. To use and navigate through the System menu, perform these steps:

1. Press the **[System]** button.
2. Press the navigation arrows to move from one "System" parameter level to another.
3. Use the **[E]** (edit) button to edit configurable parameters.
4. Press the **[Clear]** button to clear any unsaved configuration and return to the previous level.
5. Press the **[Enter]** button to confirm and save any changes made to any of the parameters currently displayed.

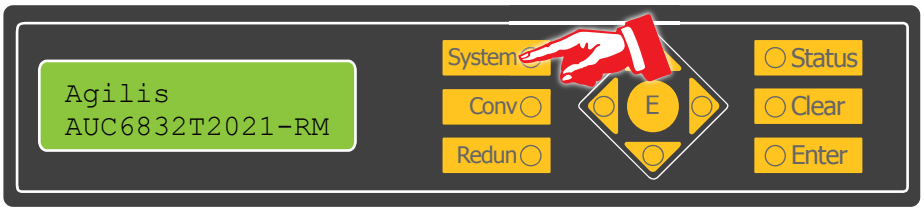


Figure 4.5 "System" Button

Table 4-2 AUC68 "**System**" menu tree

Parameter	Available editing options	Description
Part Number	*Not editable*	AUC68 Product Model
Serial Number	*Not editable*	Device Serial Number
Tx I/P Freq. Range	*Not editable*	Tx Input Frequency Range
Tx O/P Freq. Range	*Not editable*	Tx Output Frequency Range
System Unit ID	UnitA (001) UnitB (002)	This shows the Converter ID. Converter ID can be set to "UnitA (001)" or "UnitB (002)" for 1:1 redundancy configuration.
System Control	Local/Remote	Selects system control parameter.
DHCP	Enabled/Disabled	Used to enable/disable DHCP feature.
Device IP	192.XXX.XXX.XXX	Shows the device IP Address.
Subnet Mask	255.XXX.XXX.XXX	Shows the device Subnet Mask.
Device Gateway	192.XXX.XXX.XXX	Shows the device Gateway Address.
Eth Mod F/W Ver	*Not Editable*	Ethernet Firmware version
LCD F/W Ver	*Not Editable*	LCD Firmware version
Driver F/W Ver	*Not Editable*	Driver firmware version

Parameter	Available editing options	Description
Part Number	*Not editable*	AUC68 Product Model
Serial Number	*Not editable*	Device Serial Number
Tx I/P Freq. Range	*Not editable*	Tx Input Frequency Range
Tx O/P Freq. Range	*Not editable*	Tx Output Frequency Range
System Interface	RS232/RS485	Selects the type of M&C interface used.
System Sound	On/Off	Turn the sound for LCD panel operation on/off.

4.2.4 Converter Menu

The Converter menu enables user to view and edit the converter's attenuation and output settings. To use and navigate through the Converter menu, perform these steps:

1. Press the **[Conv]** button.
2. Press the navigation arrows to move from one "Conv" parameter level to another.
3. Use the **[E]** (edit) button to edit configurable parameters.
4. Press the **[Clear]** button to clear any unsaved configuration and return to the previous level.
5. Press the **[Enter]** button to confirm and save any changes made to any of the parameters currently displayed.

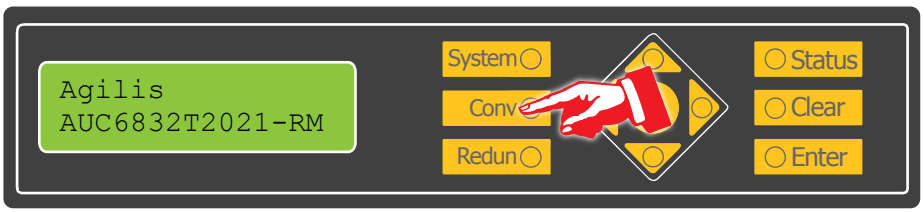


Figure 4.6 "Conv" Button

Table 4-3 AUC68 "**Conv**" menu tree

Parameter	Description	
U/C Atten	0 - 20dB (Setting)	The user can edit the Attenuation setting.
U/C Output	On	This allows the user to turn ON or OFF the frequency output of the AUC68.
	Off	

4.2.5 Redundancy Menu

The Redundancy menu enables user to edit the converter's redundancy parameters. To use and navigate through the Redundancy menu, perform these steps:

1. Press the **[Redun]** button.
2. Press the navigation arrows to move from one "Redun" parameter level to another.
3. Use the **[E]** (edit) button to edit configurable parameters.
4. Press the **[Clear]** button to clear any unsaved configuration and return to the previous level.
5. Press the **[Enter]** button to confirm and save any changes made to any of the parameters currently displayed.

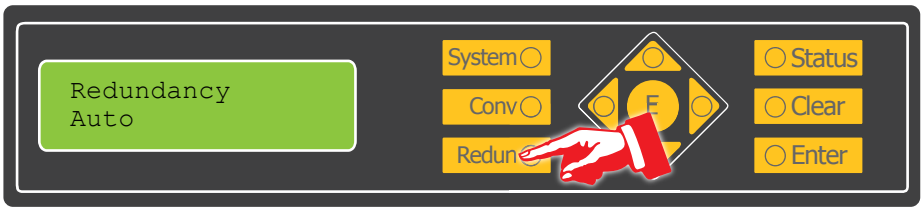


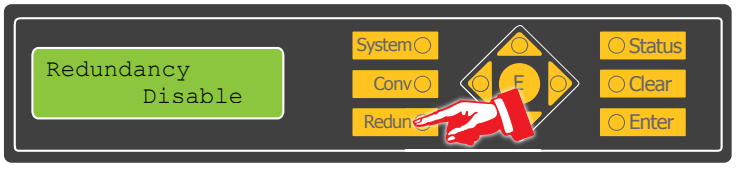
Figure 4.7 "Redun" Button

Table 4-4 AUC68 "**Redun**" menu tree

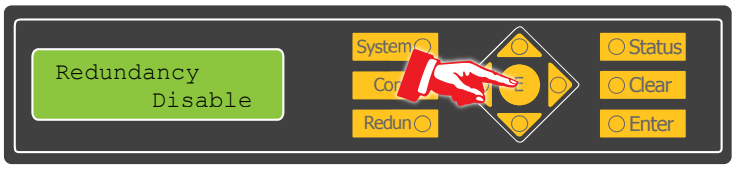
Parameter	Available options	Description
Redundancy	Enable	The user can set the configuration: Standalone (Disable) or 1:1 Redundancy (Enable).
	Disable	
Mode	Auto	Set the Redundancy Mode to automatic detection
	Manual	
Online Status	Online	Manually set mode to Online or Offline.
	Offline	

EXAMPLE: CONFIGURING THE REDUNDANCY MODE VIA THE CONTROL PANEL

1. Press the "**Redun**" menu button.

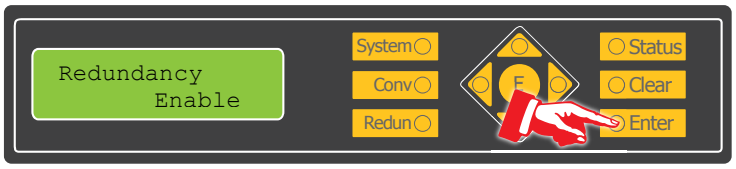


2. Press the "**E**" (edit) menu button.



3. Select "**Enable**" or "**Disable**" using the **UP/DOWN** arrow keys.

4. Press the "**Enter**" menu button to save changes.



🕮 **Note:** When two units are configured in a redundancy configuration, the "**Redundancy**" parameter should be set to "**Auto**".

4.2.6 Status Menu

The Status enables user to view the AUC68 status information such as unit status, RFLO setting, and the unit temperature.

To use and navigate through the Status menu, perform these steps:

1. Press the **[Status]** button.
2. Press the navigation arrows to move from one "Status" parameter level to another.

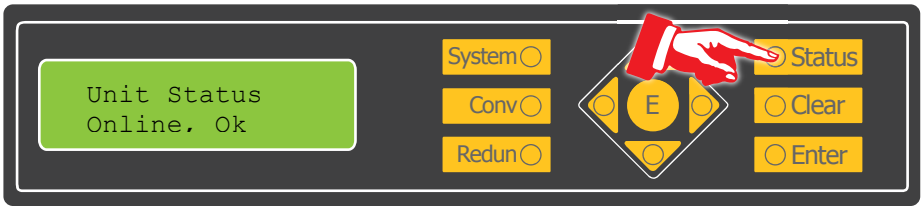


Figure 4.8 "Status" Button

Table 4-5 AUC68 "**Status**" menu tree

Parameter	Description
Unit Status	Online, OK
	Offline, Off
RFLO Syn	Locked
	Unlocked
Temperature	Displays the current unit temperature reading. If the temperature is above 70°C, an Alarm is displayed instead.

🕮 Note: The parameters displayed on the LCD screen may differ depending on your AUC68 Series model.

4.3 Using the Agilis EMS Software

The Agilis EMS Software is a lightweight network management software that allows the user to monitor and control the AUC68X Series Converter remotely through a PC.

4.3.1 Connecting the PC to the AUC

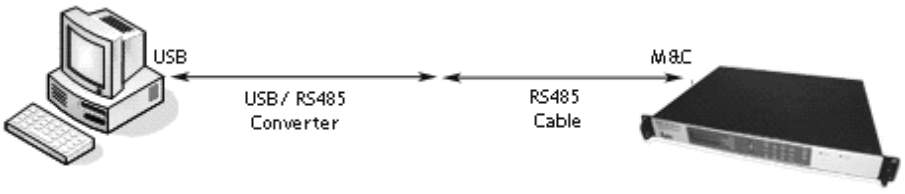


Figure 4.9 Connecting PC to the AUC68 via the USB/RS485 converter

Table 4-6 Cable pin-out configuration

RS485 cable			USB-RS485 converter	
Male DB-9	Female DB-9	Signal	Male DB-9	Signal
Pin 3	Pin 2	Data+	Pin 2	Data+
Pin 2	Pin 1	Data-	Pin 1	Data-
Pin 5	Pin 5	Ground	Pin 5	Ground

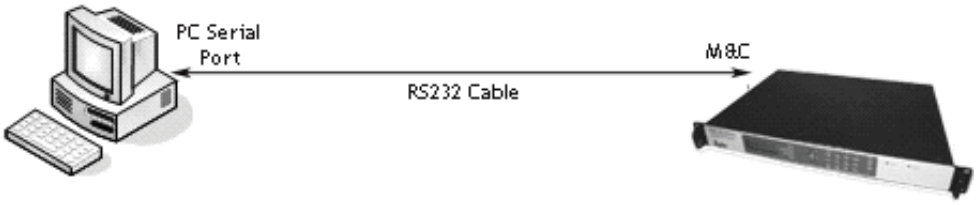


Figure 4.10 Connecting PC to Converter via RS232

Table 4-7 M&C Cable pin-out configuration for RS232

RS232 cable		
Male Circular	Female DB-9	Signal
Pin E	Pin 3	RX - receive
Pin F	Pin 2	Tx – transmission
Pin B	Pin 5	Ground

4.3.2 Installing the Agilis EMS Software

The Agilis EMS software must be installed into a PC terminal to be used to monitor your Agilis devices.

MINIMUM SYSTEM REQUIREMENTS

- Windows XP / Windows 7 operating system
- At least 1GB Hard Disk free space
- 2GB RAM (Recommended)
- A M&C serial interface

SOFTWARE INSTALLATION

📖 Note: For detailed information on the Agilis EMS Software, refer to IM02960173 Agilis EMS Software Installation and Operation Manual which can be downloaded from the www.agilissatcom.com.

Step 1 Install the USB-RS485 converter driver into your PC. Please insert the CD that was included in your package into your disc drive and run the driver installation.

Step 2 If the Agilis EMS installation CD was included in your package, please insert the CD into your PC's disc drive and unzip the setup file.

📖 Note: You can download the latest version of the Agilis EMS Software from the www.agilissatcom.com website.

Step 3 Install the Flash player, Java applet, and the mysql ODBC software inside the 3rd Party Software folder.

📖 Note: The 3rd party software must be installed before launching the EMS application; otherwise, the EMS software will not be able to establish communication with the AUC68X Series Converter.

Step 4 Launch the setup file

Locate the setup file and double click the file to start the setup.

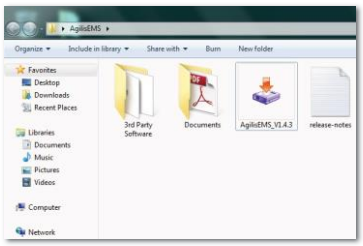


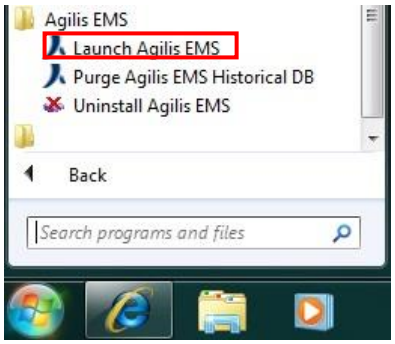
Figure 4.11 AgilisEMS.exe icon

📖 Note: You must have administrator permission on your Windows PC to install the software.

Step 5 Follow the step-by-step installation instructions to install the EMS software.

4.3.3 Launching the Agilis EMS Software

To Launch the Agilis EMS Software, click on **Start** > **All Programs** > **Agilis EMS**, click on the **Launch Agilis EMS** to start Agilis EMS.



Once all the required services are started, an Agilis icon would be displayed in the notification area usually found in the bottom right hand corner. This would indicate that the startup of services has been initiated.

An IE (Internet Explorer) window will automatically pop-up upon successful startup.

4.3.4 Main User Interface

The following screenshot shows the main user interface of the Agilis EMS software.

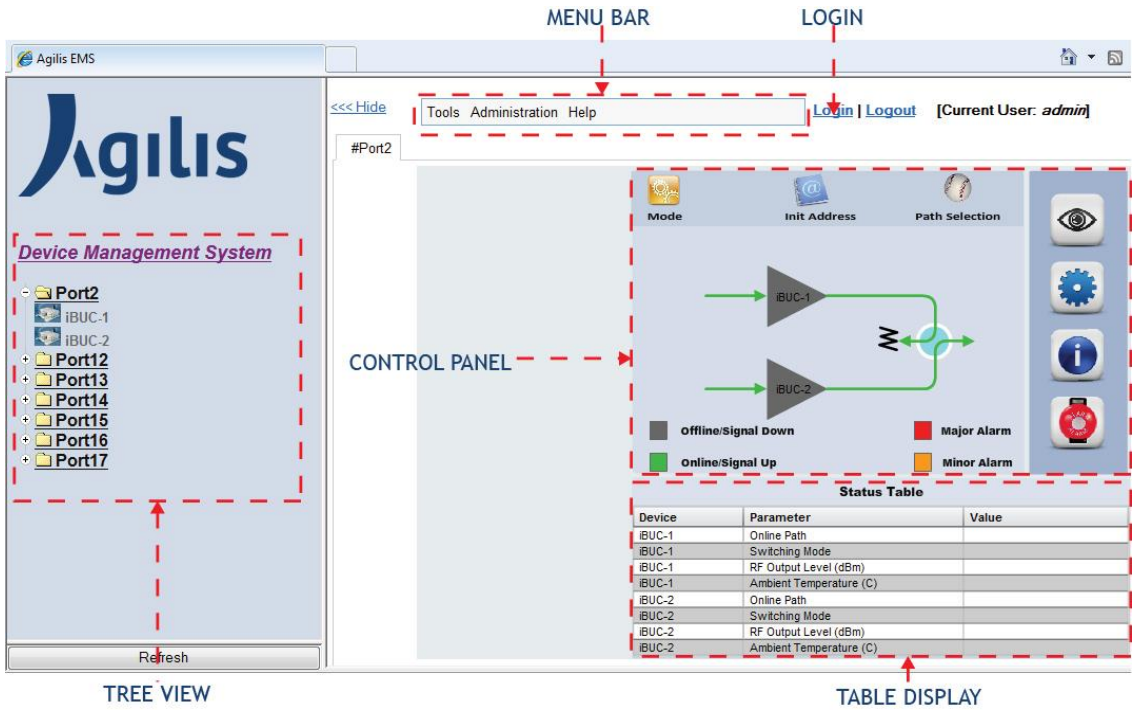


Figure 4.12 Agilis EMS Main User Interface

4.3.5 Types of Users

Table 4-8 Types of Users

User	Password	Options Available
Operator (Guest)	NA	• Analog Charts • Device Configuration
admin	admin	• Analog Charts • Device Configuration • User Management

📖 Note: It is recommended to login as an admin when configuring a device. Configuring a device using an operator account has limitations such as, the need to exit then re-launch the EMS software for the changes to take effect.

4.3.6 Selecting the Device to Manage

The Agilis EMS Software can be used to monitor and control a wide range of Agilis products (BUC, MBUC, iBUC, iBUC-RM, SSPA, LNB, RCU, AUC, SPT and OHT). The AUC68X Series Converter is under the AUC68 (Agilis-Converter Indoor) category.

Before configuring a device, the user must first identify the COM Port assigned to the Agilis device. To identify the COM Port, follow these steps:

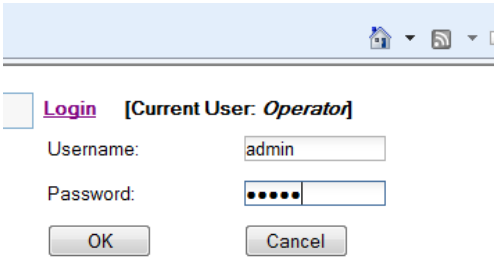
Step 1 Right click **'Computer'**, and select **'Properties'**.

Step 2 Click **'Device Manager'**.

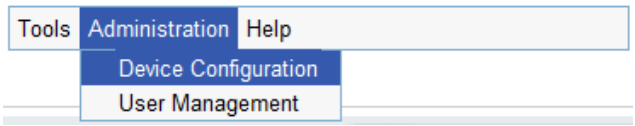
Step 3 Double-click **'Ports (COM & LPT)'** and take note of the Port number assigned to the device.

4.3.7 Configuring an AUC68 Converter

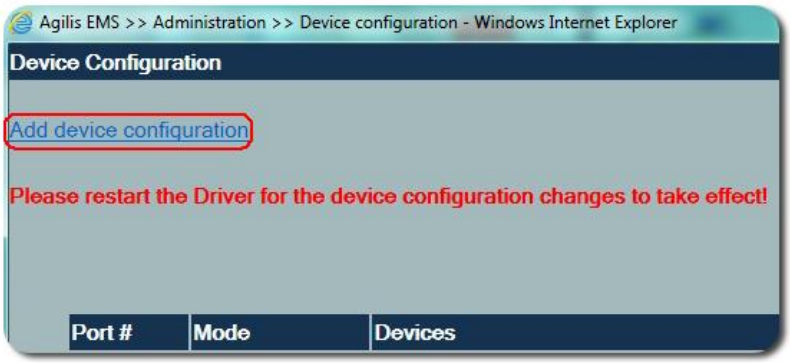
1. Login as an **'admin'**.



2. Click **'Device Configuration'** under the Administration option in the Menu Bar.



3. Click on the '**Add device configuration**' option in the Device Configuration window.


Agilis EMS >> Administration >> Device configuration - Windows Internet Explorer
Device Configuration
Add device configuration
Please restart the Driver for the device configuration changes to take effect!
Port #
Mode
Devices

4. Input the appropriate values to configure your device.

For this example, the following values are entered under Communication Settings:

Protocol: **Serial**

COM Port: **3**

Baud Rate: **9600**

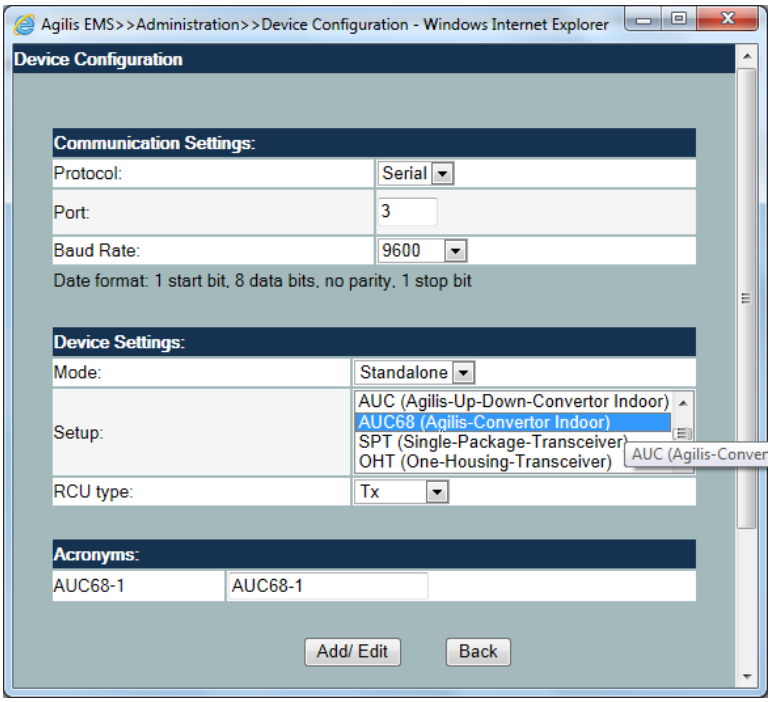
Under Device Settings:

Mode: **Standalone** or **1:1** (Only use 1:1 if the AUC unit is used in a redundancy configuration)

Setup: **AUC68 (Agilis-Converter Indoor)**

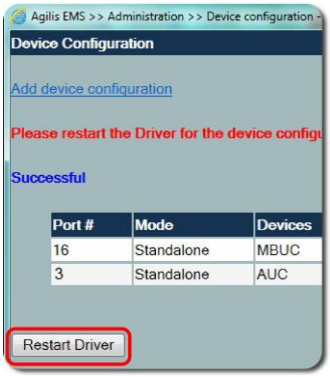
RCU type: **Tx**

The '**Acronyms**' used in this example is the default '**AUC68-1**'.

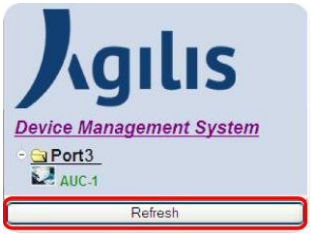


5. Click '**Add/Edit**' button.

6. Click '**Restart Driver**' for the changes to take effect.



7. Click '**Refresh**' to refresh the display on the Agilis EMS main window. The Tree Menu should display the newly configured device along with the port number.



8. The block diagram of the newly configured device will now be displayed on the Agilis EMS main window.

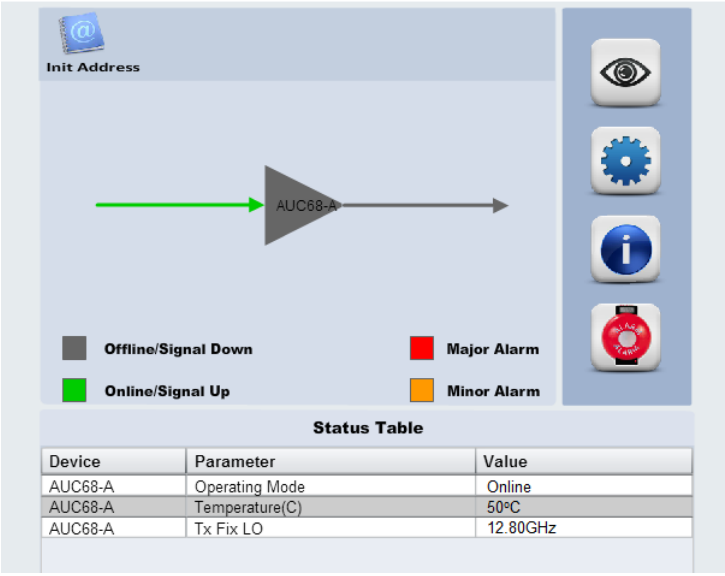


Figure 4.13 Agilis EMS AUC68 Block Diagram

4.3.8 Modifying AUC Configuration Parameters

Click on the '**Configuration**' icon from the control panel to SET AUC device configuration parameters.

To change the values of the device, simply click on the boxes where the present values are being displayed. A new window pop-up window will appear for the user to enter/select the desired value. Configuration parameters are subjective to equipment type.

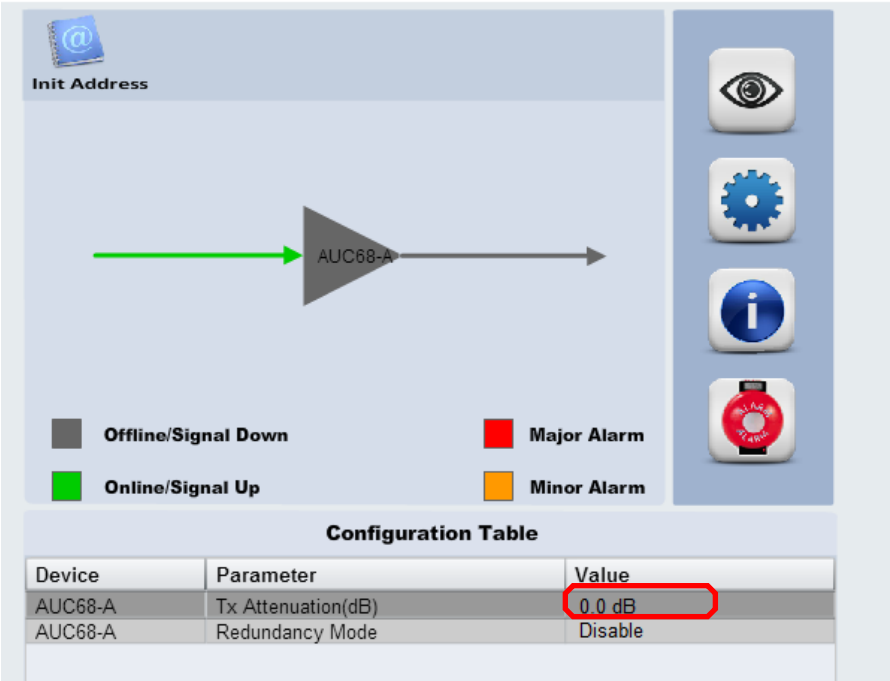


Figure 4.14 Configuration button

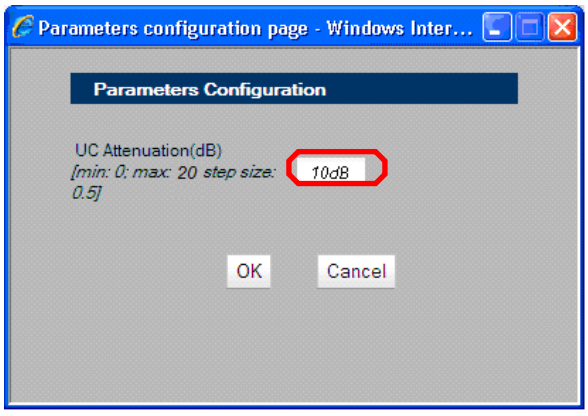
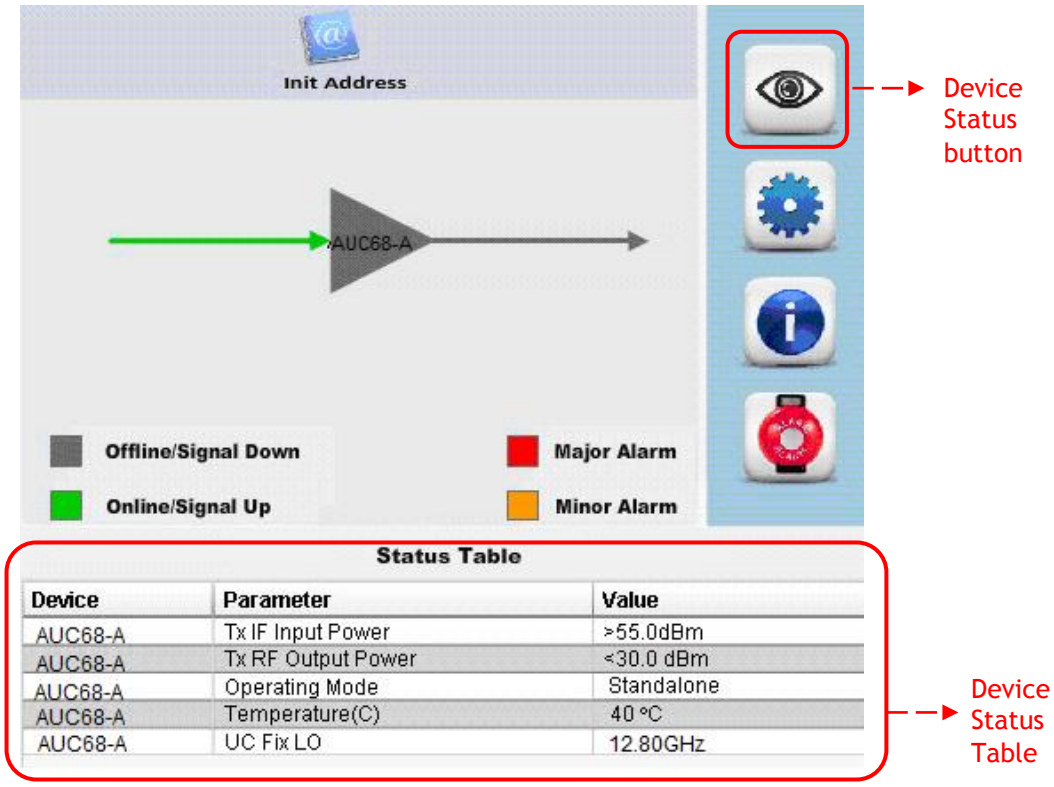


Figure 4.15 Configuring Parameters

🕮 Note: Configuration parameters are subjective to equipment type.

4.3.9 Device Status

To view the status of the Converter such as IF input, RF output power, temperature, and other operating status information, click the **"Device Status"** button.



Device	Parameter	Value
AUC68-A	Tx IF Input Power	>55.0dBm
AUC68-A	Tx RF Output Power	<30.0 dBm
AUC68-A	Operating Mode	Standalone
AUC68-A	Temperature(C)	40 °C
AUC68-A	UC Fix LO	12.80GHz

Figure 4.16 Device Status screen

ABOUT THE DEVICE STATUS SCREEN

The Device Status Screen displays the detailed operating information and parameters of the Converter's operating information which includes the **Tx IF Input Power, TX RF Output Power, Operating Mode, Temperature,** and **UC Fix LO.**

This screen automatically refreshes every 500ms to provide an updated summary of the Converter's operating parameters. You can also click **"Refresh Status"** at the bottom of the screen to manually refresh the page.

4.3.10 Device Information

Click on the **'Device Information'** button to access the Device Information screen.

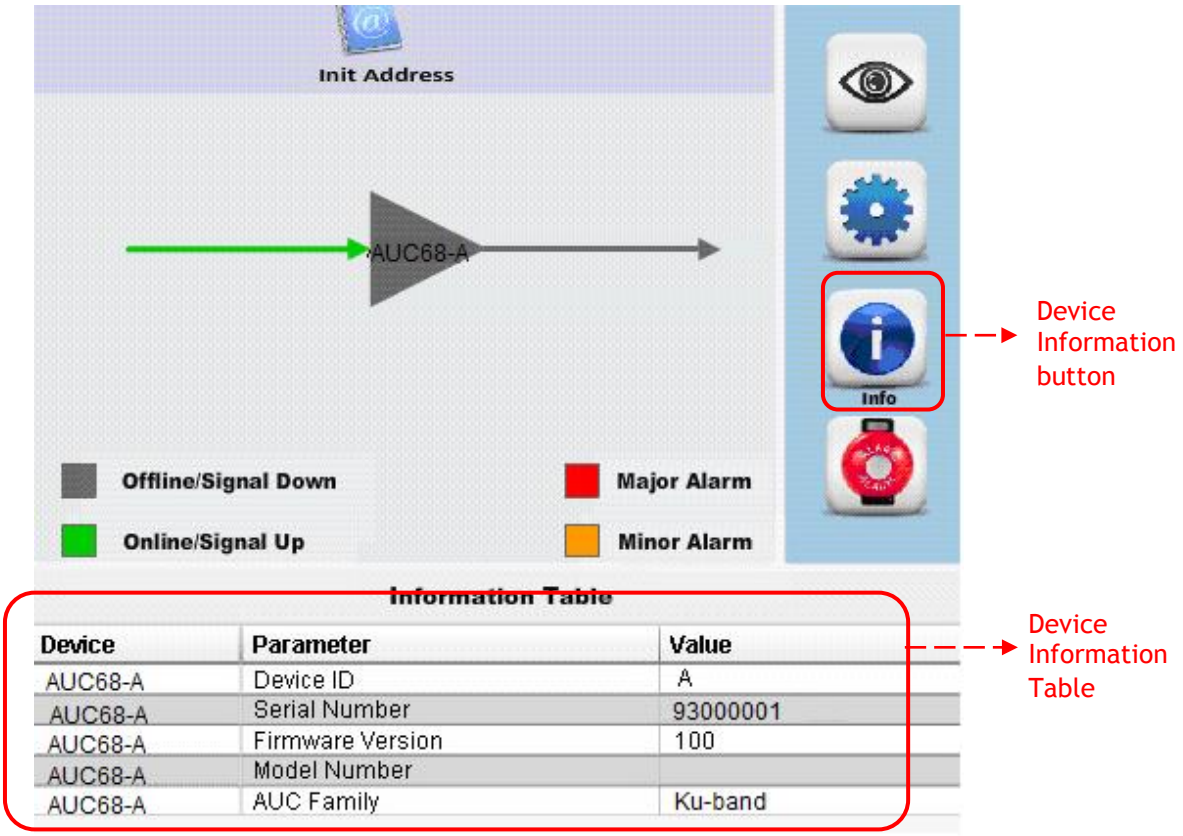


Figure 4.17 Device Information screen

ABOUT THE DEVICE INFORMATION SCREEN

The Device Information screen displays the Converter hardware information including the **Device ID, Serial Number, Firmware Version, Model Number**, and **AUC Family.**

4.3.11 Device Alarms

Click the '**Alarms**' icon to display the alarm statuses of the Converter.

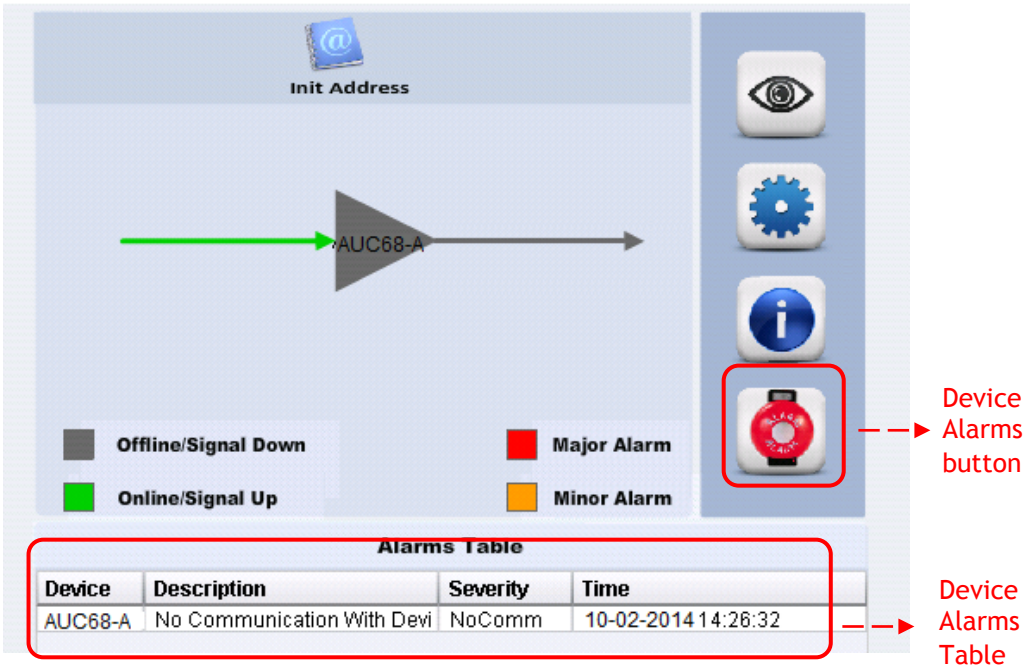


Figure 4.18 Device Alarms screen

ABOUT THE DEVICE ALARMS SCREEN

The Device Alarms screen displays a list of alarms and their corresponding status related to the Converter operations.

Each alarm can display one of four colour states.

- **Green:** Indicates that there is no alarm for the corresponding status.
- **Red:** Indicates a major alarm. Corrective action should be taken immediately.
- **Amber:** Indicates a minor alarm. Correction action should be taken if necessary.
- **Grey:** Indicates that this status is not applicable for the Converter being monitored.

This screen automatically refreshes every 500ms to provide an updated summary of the Converter's operating parameters. You can also click **"Refresh Status"** at the bottom of the screen to manually refresh the page.

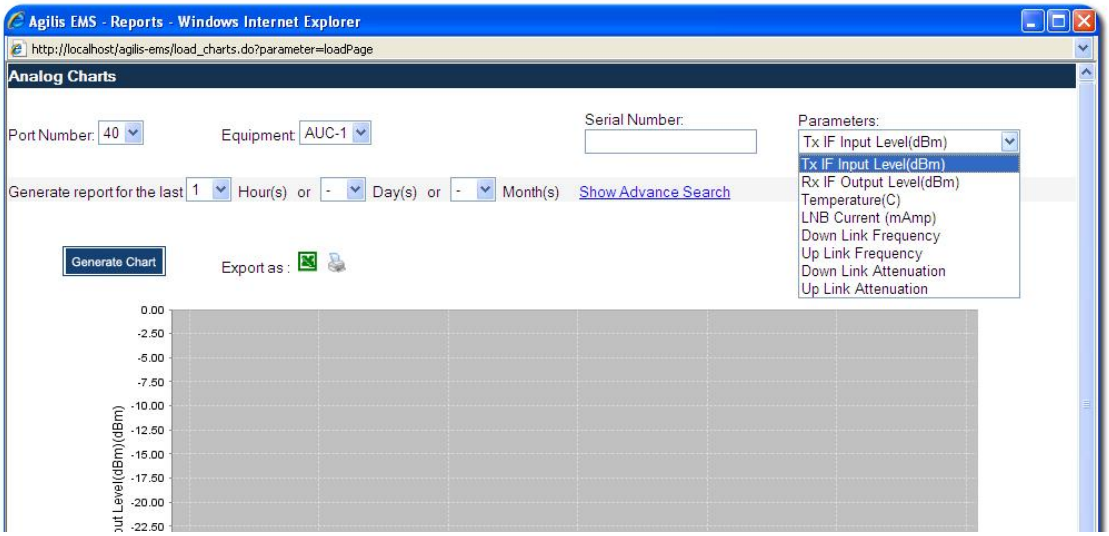
4.3.12 Tools (Chart, Debug, and Alarm Report)

The Agilis EMS software provides tools that enable you to monitor and debug the performance of your Converter through the Chart, Debug Tools, and Alarm Report options.

ABOUT THE DEVICE TOOLS OPTIONS

- **Chart**

  The Chart tool enables you to visually monitor the real-time values of the Converter's various parameters such as Temperature, UC Attenuation, and UC Input Power Level. The data can be exported as an Excel spreadsheet file and can also be printed.



- **Debug**

  The Debug Tool enables you to identify and remove existing issues in the Converter. To start debugging, press the **Start** button. The details of the debugging process are then displayed on the screen as shown below.

  🕮 **Note:** Make sure to stop the debugging process before you close the Debug Tools page.

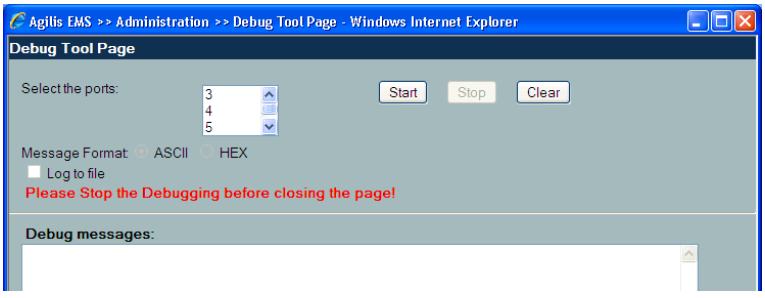


Figure 4.19 Debug Tool screen

- **Alarm Report**

  The Alarm report provides detailed information on the device alarms statuses. Selecting the **Tools→Alarm Report** menu option pops up an Excel spreadsheet file that you can save on your local drive.

4.4 Monitor & Control via HTTP (optional)

Using the Ethernet M&C component, you can monitor and manage the AUC68 from your PC by simply using a standard web browser.

The new generation of devices from Agilis provides the capability to monitor and control the device through a ubiquitous web browser available on any PC. This simple interface offers a very user-friendly mechanism to maintain and configure a device for any system configuration and settings.

At the heart of the device is an embedded http web server. It is a software component that implements the HTTP protocol and allows any web browser to access information from the device. This architecture provides the following benefits:

- It provides a thin-client interface for a traditional application and any application running the http protocol.
- It provides support for http protocol for the distribution and acquisition of information to be displayed in the regular interface — possibly a web service, and possibly using XML as the data format.
- HTTP is a well studied cross-platform protocol and there are mature implementations freely available. It is seldom blocked by firewalls and intranet routers.
- HTTP clients (e.g. web browsers) are readily available with all modern computers.

4.4.1 Connecting the PC to AUC

To monitor and control the AUC using the WEB interface via an Ethernet connection, connect your PC LAN port to the AUC68 RJ45 port using either a cross LAN cable or an Ethernet hub.

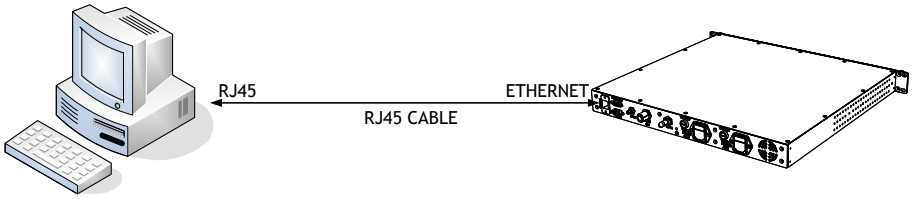


Figure 4.20 Connecting via RJ45

4.4.2 Connecting to the Web Interface

Once your AUC68 is physically connected to the PC, follow the procedure below to view the monitoring interface.

Step 1 Setup a static IP address for your LAN connection.

1. Navigate to your LAN connection properties. If you are using Windows 7, this is located in the "Network and Sharing Center" window. If you are using any other Windows system, please navigate to the "Network Connections" window. Both windows can be accessed via your PC's "Control Panel".
2. Click the network connection corresponding to the Ethernet port that the AUC is connected to and open the "Properties" window.
3. Scroll to the "**Internet Protocol (TCP/IP)**" option and click the **[Properties]** button. This will open the "Internet Protocol (TCP/IP) Properties" dialog window.
4. Here, select **Use the following IP address** and configure as follows:

   IP Address: 192.168.1.10

   Subnet mask: 255.255.255.0

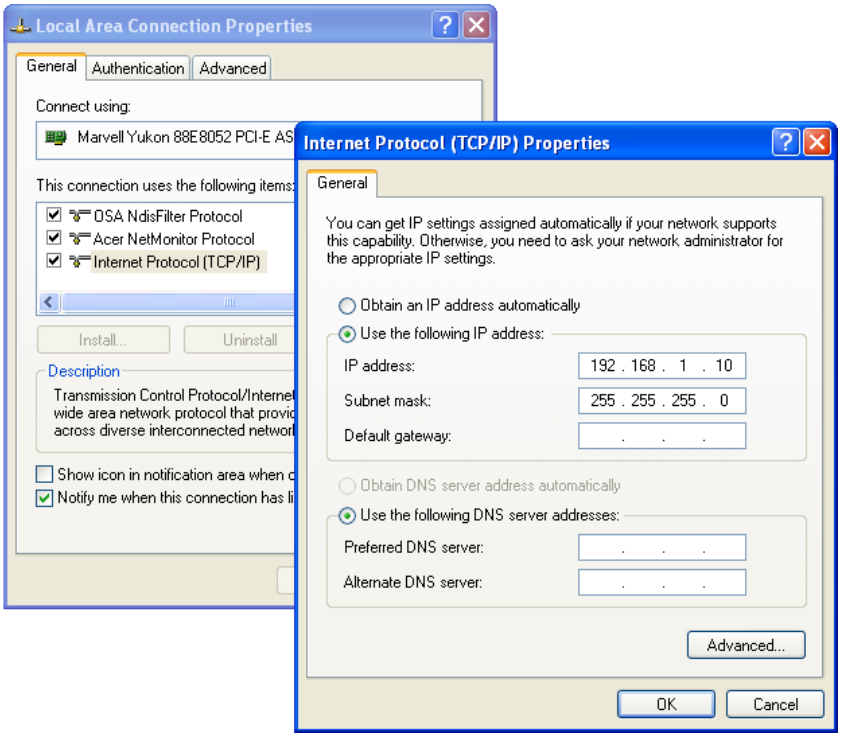

Local Area Connection Properties
General
Authentication
Advanced
Connect using:
Marvell Yukon 88E8052 PCI-E AS
This connection uses the following items:
OSA NdisFilter Protocol
Acer NetMonitor Protocol
Internet Protocol (TCP/IP)
Install...
Uninstall
Description
Show icon in notification area when c
Notify me when this connection has li
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 10
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 4.21 Configuring static IP

5. Click **[OK]** and exit the both properties windows.

Step 2 Activate your Microsoft Internet Explorer web browser.

🕮 **Note:** The AUC's HTTP module is designed to work in Internet Explorer. If you are using any other web browser, alignments may be different and some functions may not work properly.

Step 3 Disable proxy server on the web browser.

1. Select **"Tools > Internet Options"** from your menu bar.
2. Click the **"Connections"** tab. At the bottom of this window, click the **[LAN Settings]** button.
3. In the new dialog window that appears, ensure that the "Proxy Server" checkbox is unchecked.

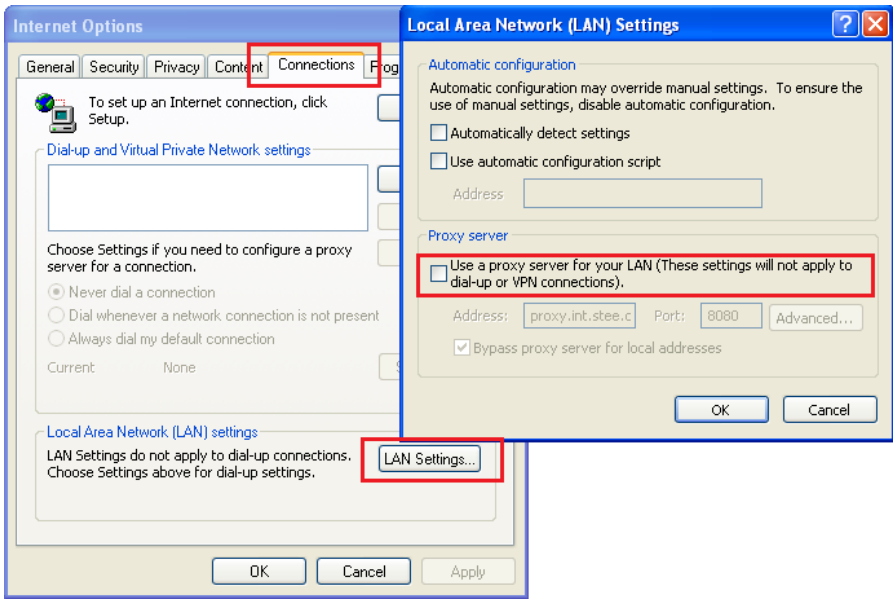


Figure 4.22 Disabling proxy server

4. Click **[OK]** to exit the screen.

Step 4 In the address bar, enter the AUC's access IP address. The AUC's default IP address is **192.168.1.1**. The Welcome screen similar to the one below should display. The same screen also displays when the **Device Information** menu is selected.

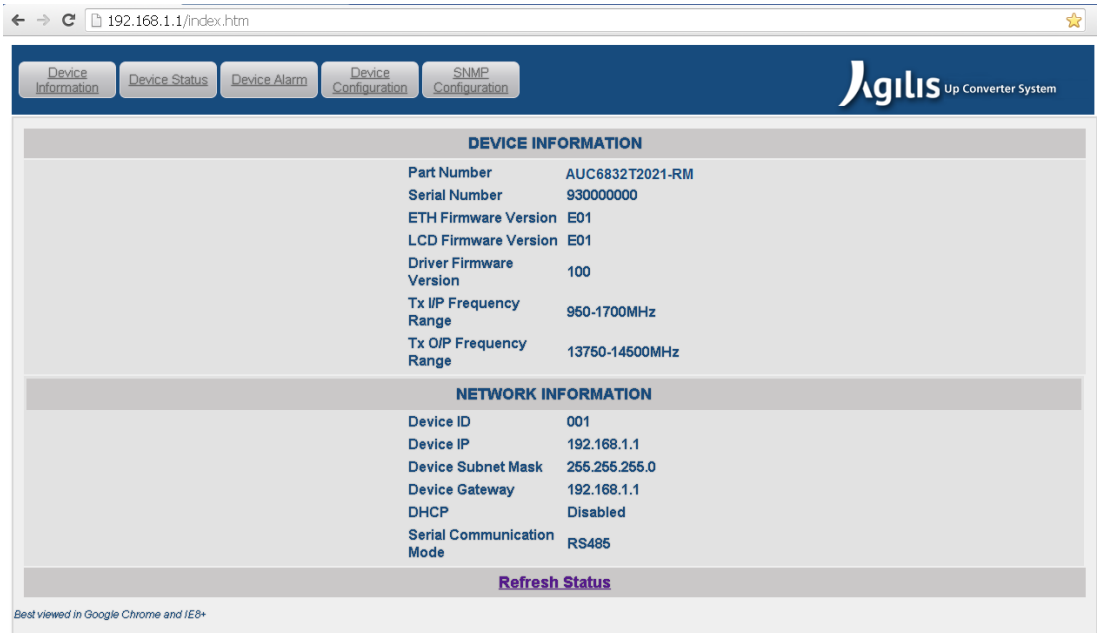


Figure 4.23 AUC68 User Interface in M&C HTTP (web)

The Device Information screen displays information about the AUC68 device and its network connection. This page is automatically refreshed every 500ms and provides a summary of the operating parameters of the connected AUC68.

The main menus are located on the top left corner of the screen: **Device Information, Device Status, Device Alarm, Device Configuration,** and SNMP Configuration. Each menu is explained in the next sections.

4.4.3 Monitoring AUC68 Status

To view the status and basic information of the AUC68, click **"Device Status"** from the main menu.

The following screenshot shows the Device Status page of an AUC68 Standalone unit. This screen shows information such as **Attenuation, RF Output, Temperature,** and **Redundancy State.**

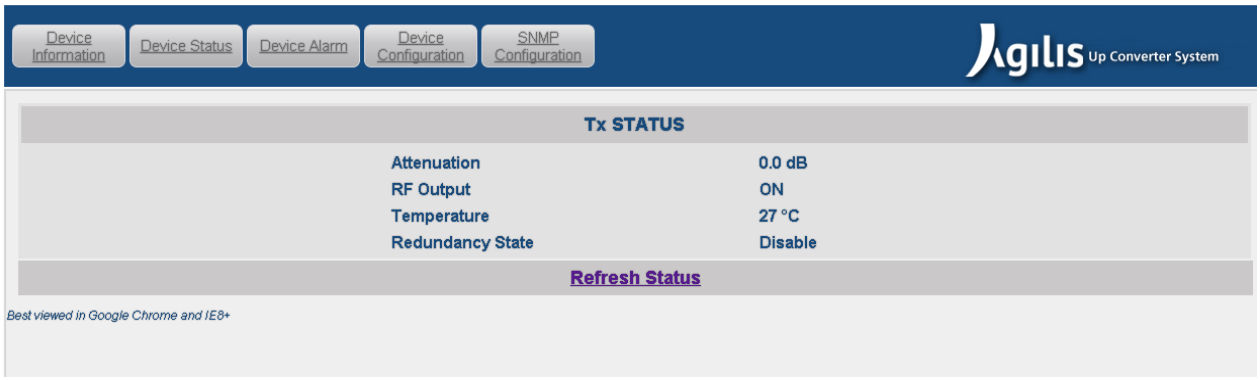


Figure 4.24 AUC68 Device Status page in Standalone configuration

The following screenshot shows the Device Status page of an AUC68 unit in a Redundancy configuration. This screen shows information about the AUC **attenuation, RF Output settings**, and Redundancy operating parameters such as **Redundancy State**, **Redundancy Mode**, and the **Operating State**.

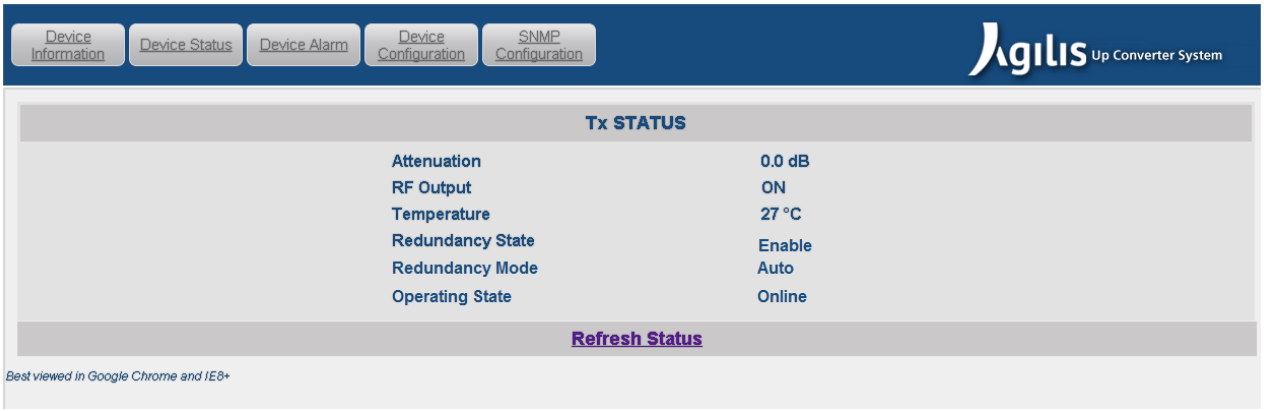


Figure 4.25 AUC68 Device Configuration page in Redundancy configuration

This screen automatically refreshes every 500ms to provide an updated summary of the AUC's operating parameters. You can also click **"Refresh Status"** at the bottom of the screen to manually refresh the page.

4.4.4 Device Alarms

To display all the alarm status of the AUC68, click **"Device Alarm"** from the top menu. The following screenshot shows the alarm statuses of the AUC68 Up Converter operating parameters such as **RF LO** and **RF Output.**

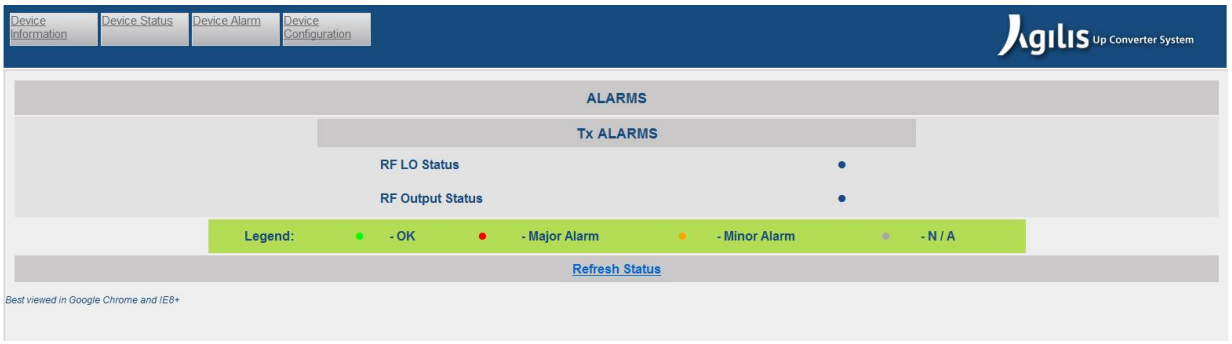


Figure 4.26 AUC68 Device Alarm page

Each alarm can display one of four colour states.

- Green: Indicates that there is no alarm for the corresponding status.
- Red: Indicates a major alarm. Corrective action should be taken immediately.
- Amber: Indicates a minor alarm. Correction action should be taken if necessary.
- Grey: Indicates that this status is not applicable for the AUC being monitored.

This screen automatically refreshes every 500ms to provide an updated summary of the AUC alarm statuses. You can also click **"Refresh Status"** at the bottom of the screen to manually refresh the page.

4.4.5 Configuring the AUC

You must login to edit any configuration of the AUC via this HTTP interface. To perform device configuration, perform these steps:

1. Click **"Device Configuration"** from the main menu and the login window will appear.

Connect to 192.168.1.1
The server 192.168.1.1 at Protected requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
Password:
Remember my password
OK
Cancel

Figure 4.27 Logging In – Device Configuration

🕮 **Note:** Both the **"Device Configuration"** and **"SNMP Configuration"** screens can only be accessed after logging in. Access to both screens is maintained after logging in until the browser is closed.

2. Enter the login name and password and click **[OK]** to enter the configuration screen. The Device Configuration screen appears after you login.

   🕮 **Note:** The factory default login name and password is "**admin**" and "**admin**" respectively.

The Device Configuration screen includes three sets of configuration panels:

- **Network Configuration**
- **Operations**
- **Password Setting**

Each configuration panel includes various parameters and editing options which are explained in the next sections.

The following screenshot shows the Device Configuration screen of an AUC standalone unit.

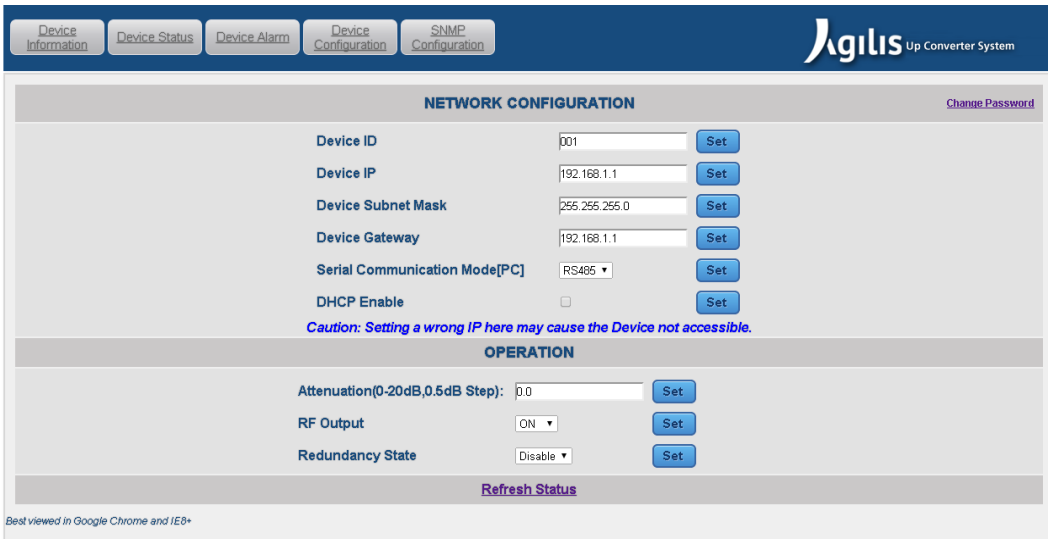


Figure 4.28 AUC68 Device Configuration page – Standalone

The following screenshot shows the Device Configuration screen of an AUC68 unit that is configured in a Redundancy system. Additional options are available such as **Redundancy Mode** and **Operating State.**

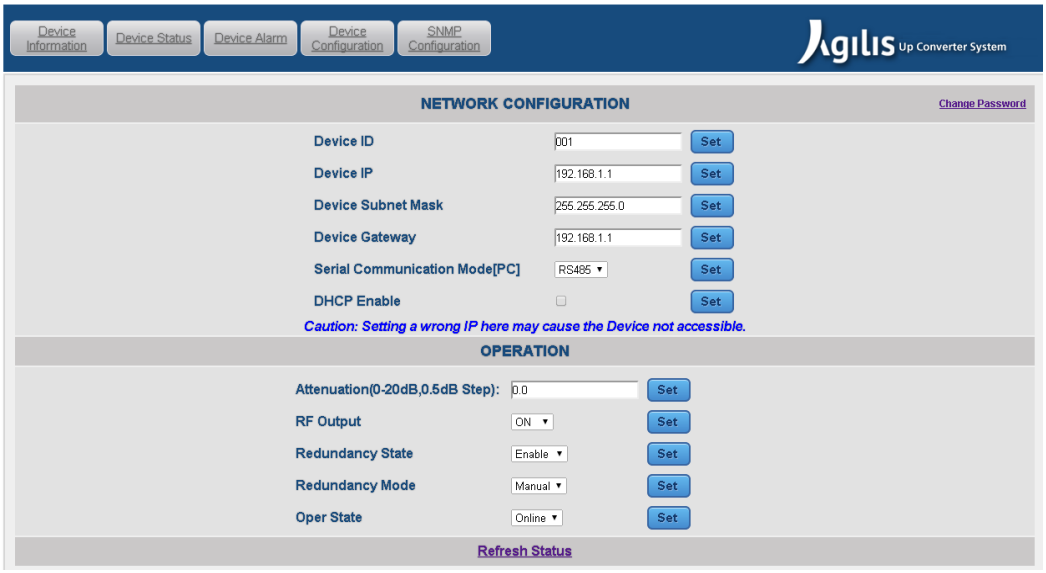


Figure 4.29 AUC68 Device Configuration page - Redundancy

NETWORK CONFIGURATION

"Interface Configuration" allows you to configure the AUC network information including the **Device ID, Device IP, Device Subnet Mask, Device Gateway, Serial Communication Mode, DHCP Enable** settings.

OPERATIONS

"Operations" allows you to configure the AUC operating parameters such as **Attenuation, RF Output,** and **Redundancy State**.

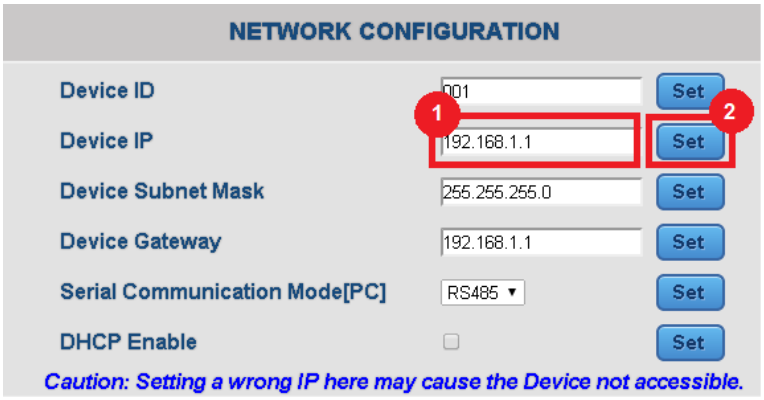
PASSWORD SETTING

"Change Password" allow you to change your current password. To change password, click on the Change Password link and fill out the required information.

EXAMPLE: MODIFY NETWORK CONFIGURATION PARAMETER: DEVICE IP

The following example shows how to change the Device IP of the AUC unit. Perform these steps:

1. Enter the desired value into the textboxes.
2. Click the corresponding **[Set]** button.



WARNING: Setting a wrong IP in Network Configuration may cause the Device not accessible.

4.4.6 Setting Up SNMP Parameters

The "SNMP Configuration" menu enables you to specify how the AUC communicates with the SNMP Manager. If you have yet to login to the HTTP interface, you will be prompted to do so when clicking the **"SNMP Configuration"** menu option. The factory default username and password is "**admin**", "**admin**" respectively.

🕮 **Note:** Both the **"Device Configuration"** and **"SNMP Configuration"** screens can only be accessed after logging in. Access to both screens is maintained after logging in until the browser is closed.

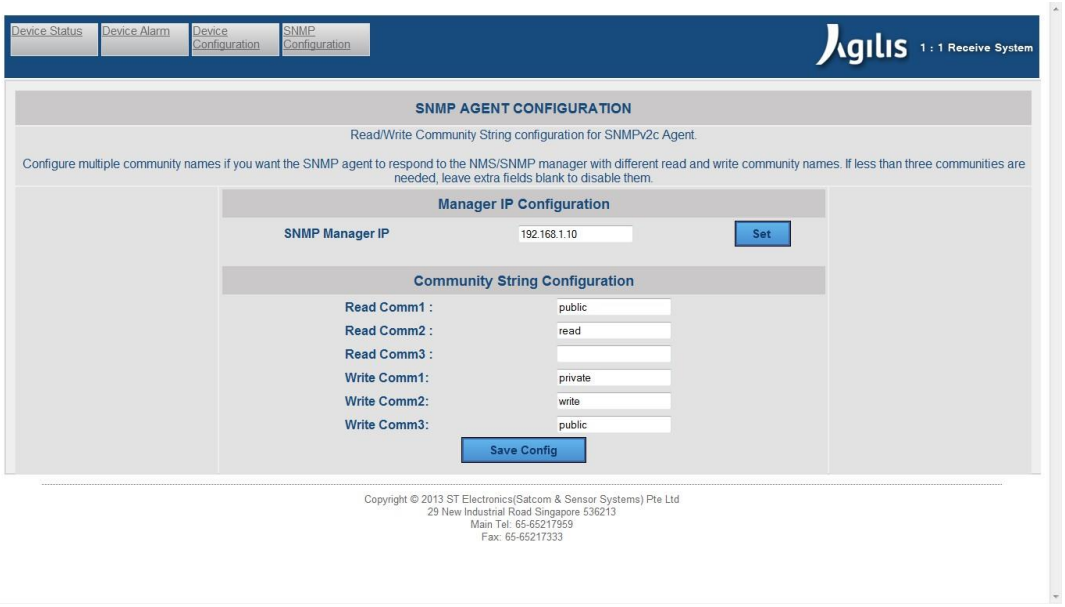

Device Status
Device Alarm
Device Configuration
SNMP Configuration
Agilis 1 : 1 Receive System
SNMP AGENT CONFIGURATION
Read/Write Community String configuration for SNMPv2c Agent.
Configure multiple community names if you want the SNMP agent to respond to the NMS/SNMP manager with different read and write community names. If less than three communities are needed, leave extra fields blank to disable them.
Manager IP Configuration
SNMP Manager IP
192.168.1.10
Set
Community String Configuration
Read Comm1 :
public
Read Comm2 :
read
Read Comm3 :
Write Comm1:
private
Write Comm2:
write
Write Comm3:
public
Save Config
Copyright © 2013 ST Electronics(Satcom & Sensor Systems) Pte Ltd
29 New Industrial Road Singapore 536213
Main Tel: 65-65217959
Fax: 65-65217333

Figure 4.30 SNMP configuration settings

4.5 Monitor & Control via SNMP

Simple Network Management Protocol (SNMP) provides a framework for the definition of management information and the exchange of that information. A SNMP manager is a software module that manages part or all of the system configurations while an agent is a software module in the unit that is being managed. Transfer of information can be initiated by both the manager (via polling) and the agent (via SNMP Trap).

By default, the manager initiates requests and receives responses via port 161. The agent sends SNMP Trap messages via port 162.

A database describing the unit's application parameters is stored in the SNMP agent. This SNMP Management Information Base (MIB) database is used to interpret the signals requested and received between the manager and agent. The database includes both a standard set of values common to hardware nodes on a network and a private set of values that is unique to the specific unit.

Object Identifiers (OID) are a series of numbers that uniquely identify variable to an SNMP agent. OIDs are arranged in a hierarchical tree structure.

The figure below shows the categorization of AUC parameters that are used in defining the MIBs for SNMP enabled Agilis products. These categories help define various device parameters very distinctly and help for easy access and navigation when using any manager.

🕮 **Note:** This figure shows the full set of categories and does not apply to all Agilis products. These categories are closely used in defining the product MIBS for all the SNMP enabled devices. The set of parameters that are available in each Agilis product will differ.

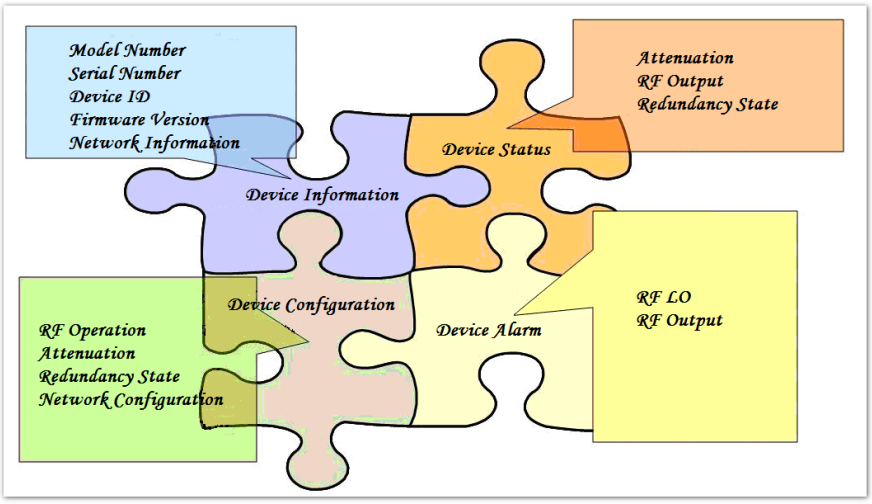


Figure 4.31 SNMP MIB categories

4.5.1 Connecting the PC to AUC

Using the Ethernet M&C component, you can monitor and control the AUC using an SNMP manager via an Ethernet connection. Connect your PC LAN port to the AUC's RJ45 port using either a cross LAN cable or an Ethernet hub.

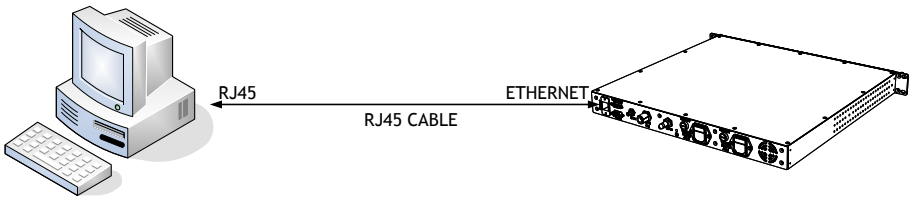


Figure 4.32 Connecting via the RJ45

4.5.2 Connecting to the SNMP Interface

Once your AUC is physically connected to the PC, follow the procedure below to connect the SNMP agent module to a SNMP manager in your PC.

Step 1 Activate your SNMP manager. Agilis products will work with most standard SNMP managers available in the market.

🕮 **Note:** For the purpose of this manual, all screenshots in this section are made using the SNMP Manager from iReasoning. You can download or purchase any standard third party SNMP Manager software and install it into your PC.

Step 2 In the SNMP manager, enter the AUC's access IP address. The following show the default configuration:

Agent IP: 192.168.1.1

Subnet Mask: 255.255.255.0

SNMP Manager: 192.168.1.10

Step 3 Insert the CD included in your package into your PC's disc drive and load the MIB definition file ("AGILIS-PROD-XXX-MIB.mib") into your SNMP manager.

You can also download the MIB definition file from our website at www.agilissatcom.com.

Once the file has been loaded, a tree structure should be displayed in your manager as shown below.

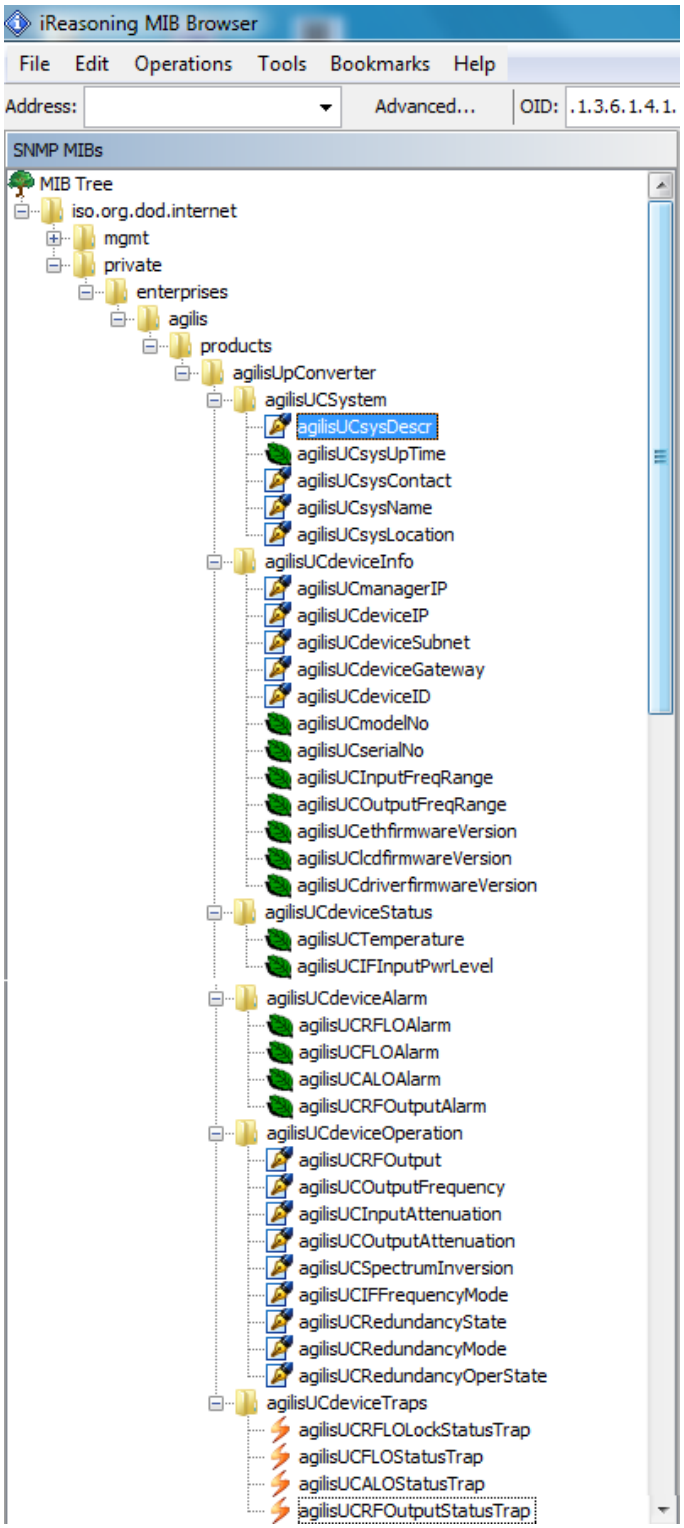


Figure 4.33 AUC MIB tree

4.5.3 Managing the AUC via an SNMP Manager

NAVIGATING THE MIB TREE

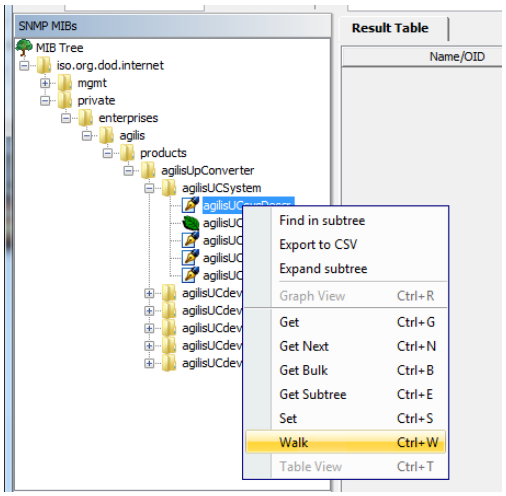


Figure 4.34 Navigating the MIB tree

Each item in the tree is called a node. A parent or root node can be expanded into branches. You can view each branch by clicking the +/- icons in the tree. Each branch eventually terminates at leaf nodes.

To search for a specific node within a branch, right-click on the parent node of that branch and select “Search” and type the name of the node to search for.

You can expand or collapse the entire tree or branch by right-clicking on the parent node and selecting the “Expand subtree” or “Collapse subtree” option.

UNDERSTANDING SNMP OPERATIONS

The full set of SNMP commands that can be initiated from the SNMP manager is explained in the table below.

To execute a command on any node in the tree, simply select the node and right-click. From the menu that appears, select the command to execute. Note that not all commands are available for every object in the tree.

SNMP Command	Explanation
GET	Used to obtain a single piece of information from the AUC such as the Device ID etc.
GET NEXT	Used to obtain two pieces of information from the selected object and the next object.
GET BULK	Used to obtain multiple pieces of information from the AUC at once.
GET SUBTREE	Used to poll for information corresponding to all objects within the subtree.
SET	Used to configure a specific parameter in the AUC. Note that this command will only be available for configurable parameters.

SNMP Command	Explanation
WALK	Used to poll for all data from the objects within the tree.
TABLE VIEW	Used to poll for and view data table of an object. Note that this is only available if the selected object stores tabulated data.

USING THE MIB BROWSER

1. Open the MIB Browser. In this example, we use iReasoning MIB Browser to configure SNMP. Click File and select Load MIBs.

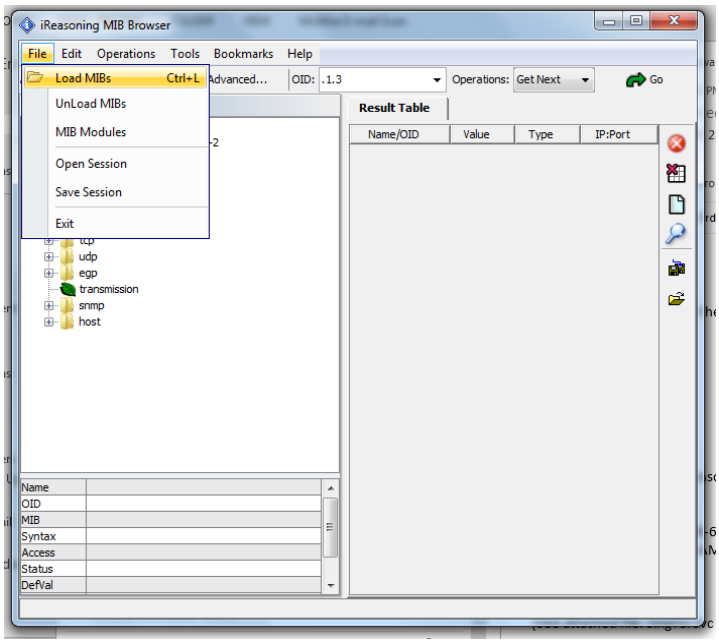


Figure 4.35 Loading the MIB

2. Once done, locate the MIB file in your system.

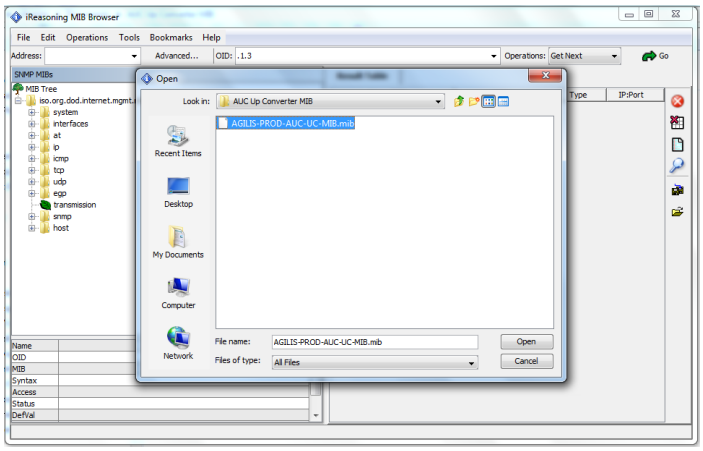


Figure 4.36 Loading the AUC MIB

3. Once the MIB file is loaded, the SNMP MIB details will appear. Click on the folders to view more information.

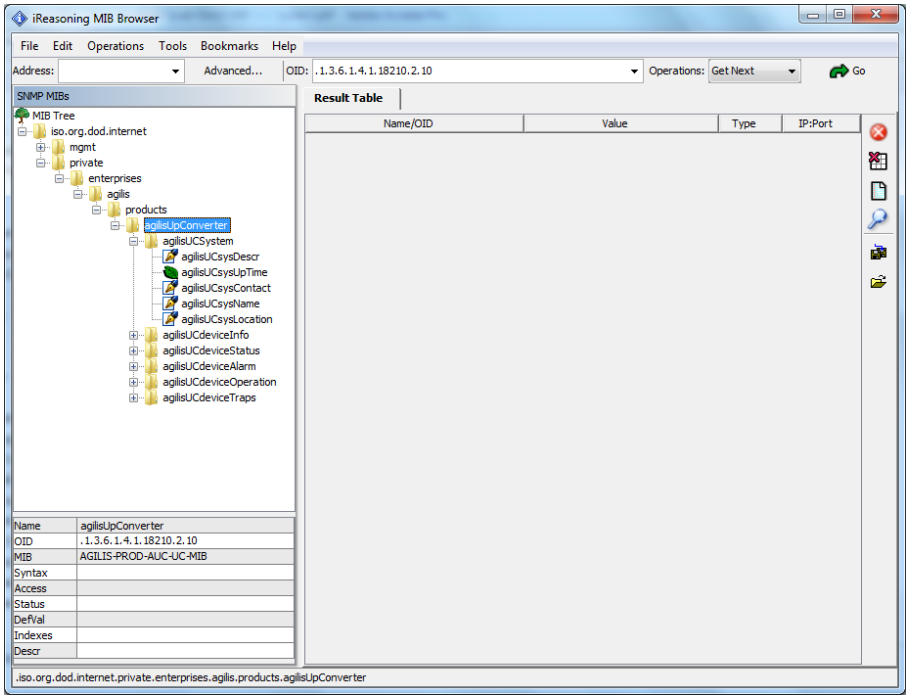


Figure 4.37 AUC MIB Browser Interface

4. Execute a command on any node in the tree. Right click on the node and select a command you want to execute. In this example, “Walk” is selected.

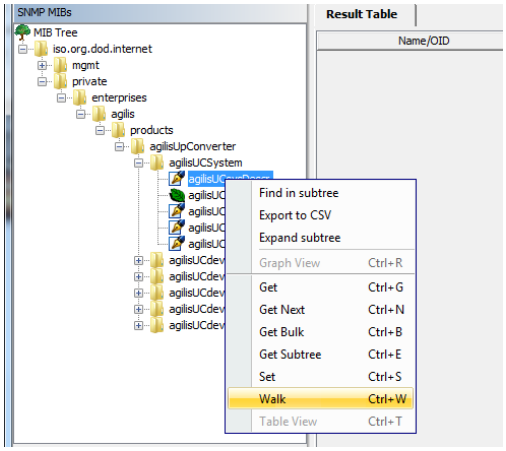
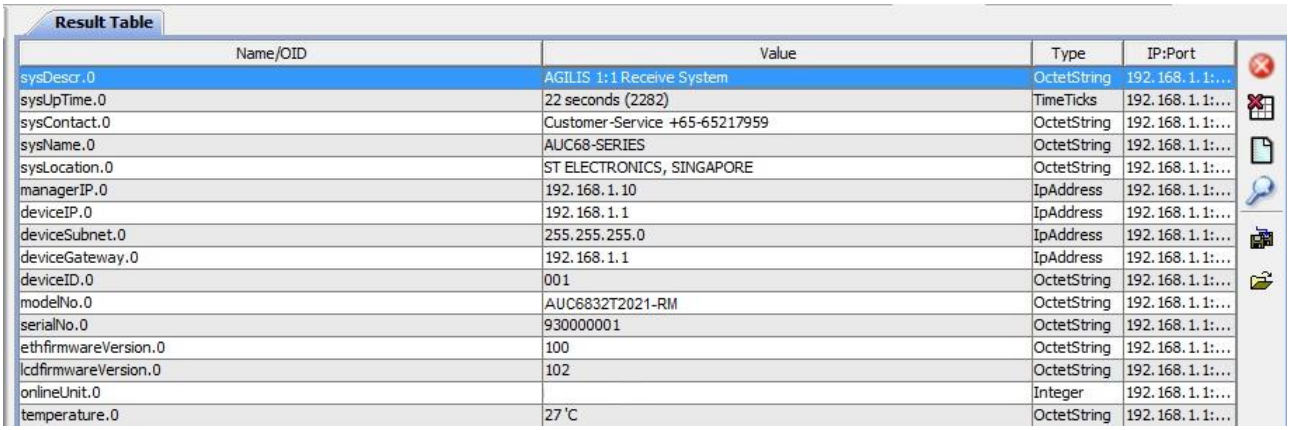


Figure 4.38 Walk Command

5. SNMP values will be retrieved once a command is selected.

The figure below shows an example of the parameters retrieved by the "WALK" command.



Result Table

Name/OID	Value	Type	IP:Port
sysDescr.0	AGILIS 1:1 Receive System	OctetString	192.168.1.1:...
sysUpTime.0	22 seconds (2282)	TimeTicks	192.168.1.1:...
sysContact.0	Customer-Service +65-65217959	OctetString	192.168.1.1:...
sysName.0	AUC68-SERIES	OctetString	192.168.1.1:...
sysLocation.0	ST ELECTRONICS, SINGAPORE	OctetString	192.168.1.1:...
managerIP.0	192.168.1.10	IpAddress	192.168.1.1:...
deviceIP.0	192.168.1.1	IpAddress	192.168.1.1:...
deviceSubnet.0	255.255.255.0	IpAddress	192.168.1.1:...
deviceGateway.0	192.168.1.1	IpAddress	192.168.1.1:...
deviceID.0	001	OctetString	192.168.1.1:...
modelNo.0	AUC6832T2021-RM	OctetString	192.168.1.1:...
serialNo.0	930000001	OctetString	192.168.1.1:...
ethfirmwareVersion.0	100	OctetString	192.168.1.1:...
lcdfirmwareVersion.0	102	OctetString	192.168.1.1:...
onlineUnit.0		Integer	192.168.1.1:...
temperature.0	27 'C	OctetString	192.168.1.1:...

Figure 4.39 SNMP WALK

6. To configure and update the SNMP values, right click on the nodes in deviceOperation folder and select "Set".

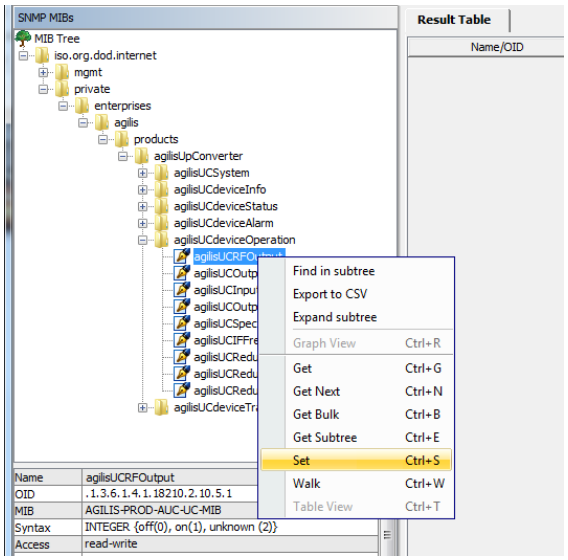


Figure 4.40 Set Command

Appendix A Customer Service

Agilis provides a variety of after-sales services. This chapter explains some of the services offered including warranty information, the Return Material Authorization process, parts replacement etc.

A.1 Warranty Information

If the unit fails due to defects in materials or workmanship, Agilis will, at its sole discretion, repair or replace the defective parts, free of charge, within two (2) years from the date of its shipment from the Agilis production factory.

Note that shipping cost to Agilis will not be covered under this warranty guarantee.

This warranty will be voided, freeing Agilis from any liability or obligation to the Purchaser with respect to the product in the following situations:

- The product has been damaged during shipment.
- Failure caused by products not supplied by Agilis or its authorized contractors and agents.
- Failure caused by operation of the product outside of its published electrical and environmental specifications or any causes other than ordinary use.
- Water ingress due to improper installation.

A.2 Return Material Authorization (RMA)

PRE-RMA CHECKLIST

Shipping the unit to and from your supplier or the factory for repair is a costly and time consuming procedure that may cause disruption in your system for a prolonged period of time. Hence, we recommend that you use the list below to inspect the system thoroughly before initiating a RMA procedure.

Please check		
Product model no./ serial no.		
When did the unit fail:	☐ During initial startup ☐ Unit worked normally before failure	
Initial Fault Symptom:		
Consistent or intermittent fault:	☐ Consistent ☐ Intermittent	
Duration of operation before failure:		
Are fans working normal?	☐ Yes ☐ No	
Is the airflow path blocked?	☐ Yes ☐ No	
10MHz Ref. level at failure:		
IF input level at failure:		
Output power at failure:		
LED status:		
Is the device and setup properly grounded?	☐ Yes ☐ No	
AC Potential	Live – Neutral	
	Live – Ground	
	Ground – Neutral	
AC-DC converter working status		
Is the primary power source working and free of power spikes?	☐ Yes ☐ No	
Were there any recent power outages that affected the device?	☐ Yes ☐ No	
Replace the device with a working one (if available) and check if the system works.	☐ Works with the new device ☐ Does not work with the new device	

Please check	
Detail the diagnosis performed that localized the fault to the unit as the point of failure	

If you need to return the devices or any components to Agilis for repair, please contact Agilis to obtain a Return Material Authorization (RMA) number by filling in our RMA Request form. You can obtain this form via our website at www.agilissatcom.com. Once you receive a RMA number, carefully repack the unit and attach this number to the unit to be shipped to Agilis.

Agilis provides repair services for products under or out of warranty.

A.3 Additional Technical Support

If you require further technical support, please contact Agilis using the contact information below:

Address:	ST Electronics (Satcom & Sensor Systems) Pte Ltd. 6 Ang Mo Kio Electronics Park Road Singapore 567711
Service Hotline:	(+65) 6521 7959
Fax:	(+65) 6521 7333
Email:	techsvc_satcoms@stee.stengg.com

You may also visit our website at www.agilissatcom.com for the addresses and contact details of our regional service centres.

Appendix B Unit Specifications

B.1 System Specification Tables

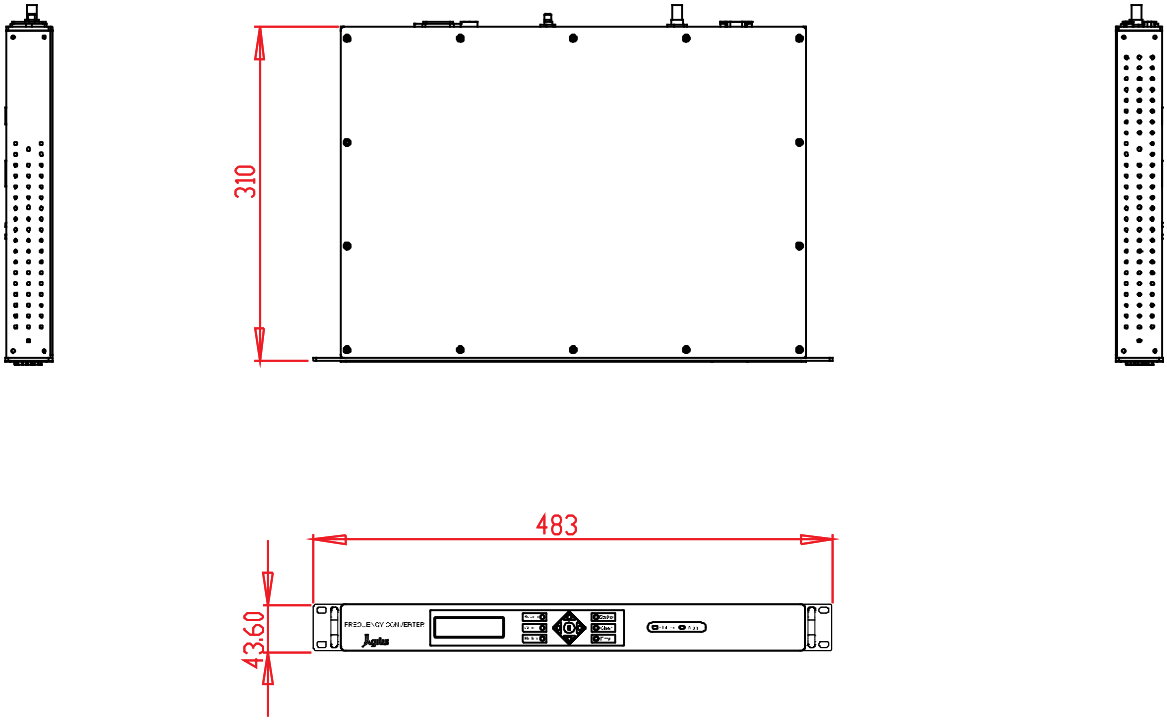
AUC6832T2021-RM System Specifications		
Characteristics	Value	
Input Frequency	950~1700MHz	
Output Frequency	13.75~14.5GHz	
LO (GHz)	12.80GHz	
Input Impedance	50Ω	
Input VSWR	1.5:1	
Output Impedance	50Ω	
Output VSWR	1.3:1	
Output Power @P1dB	0dBm	
Conversion Gain	25dB min 32dB max	
Gain Adjustment	20dB with 0.5dB step	
Gain Flatness	1.0dB max @ 36MHz Bandwidth	
	3.0dB max @ Full Bandwidth	
Full Band Spurious	Input OFF	-65dBm max
	Input 0dBm	-55dBc max
IMD (2 carriers 2MHz apart, combined power -3dBm output)	-35dBc max	
Phase Noise	@1KHz	-73dBc/Hz
	@10KHz	-83dBc/Hz
	@100KHz	-93dBc/Hz

External Reference Requirement		
Reference Frequency		10MHz
Input Power Level		+2dBm min, +10dBm max
Phase Noise	1Hz offset	-85 dBc/Hz max
	10Hz offset	-115 dBc/Hz max
	100Hz offset	-140 dBc/Hz max
	1KHz offset	-150 dBc/Hz max
	10KHz offset	-155 dBc/Hz max

Mechanical and Environmental Specifications	
Dimensions	483L x 310W x 44H mm
Weight	4.5kg
Operating Temperature	Up to 50ºC
Storage Temperature	-10ºC to 60ºC
Humidity	up to 95% (Non-condensing)

Power Supply Requirements	
AC Input Voltage	90~264VAC 50/60Hz
Power Consumption (exclude BUC)	50VA
Interface	IEC 3-Pin Plug

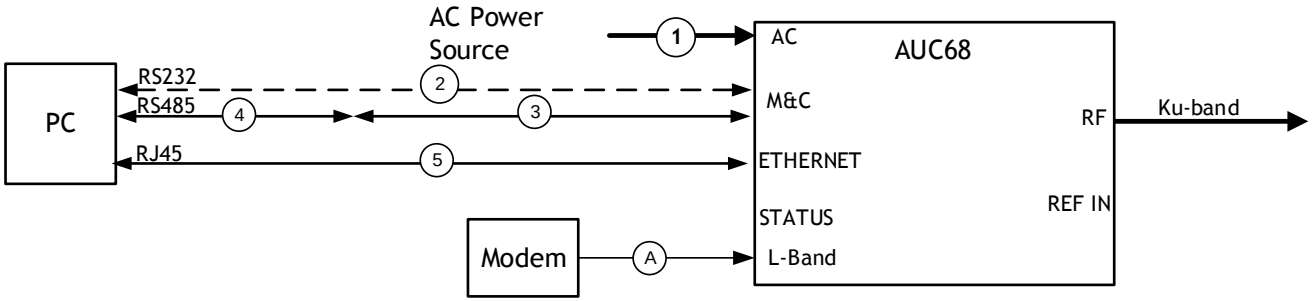
B.2 AUC68 Unit Outline Drawing



Appendix C Document Revision Log

Rev	Date	Description
A	February 2014	Initial Release

AUC68 Standalone Configuration



LIST OF SYSTEM COMPONENTS

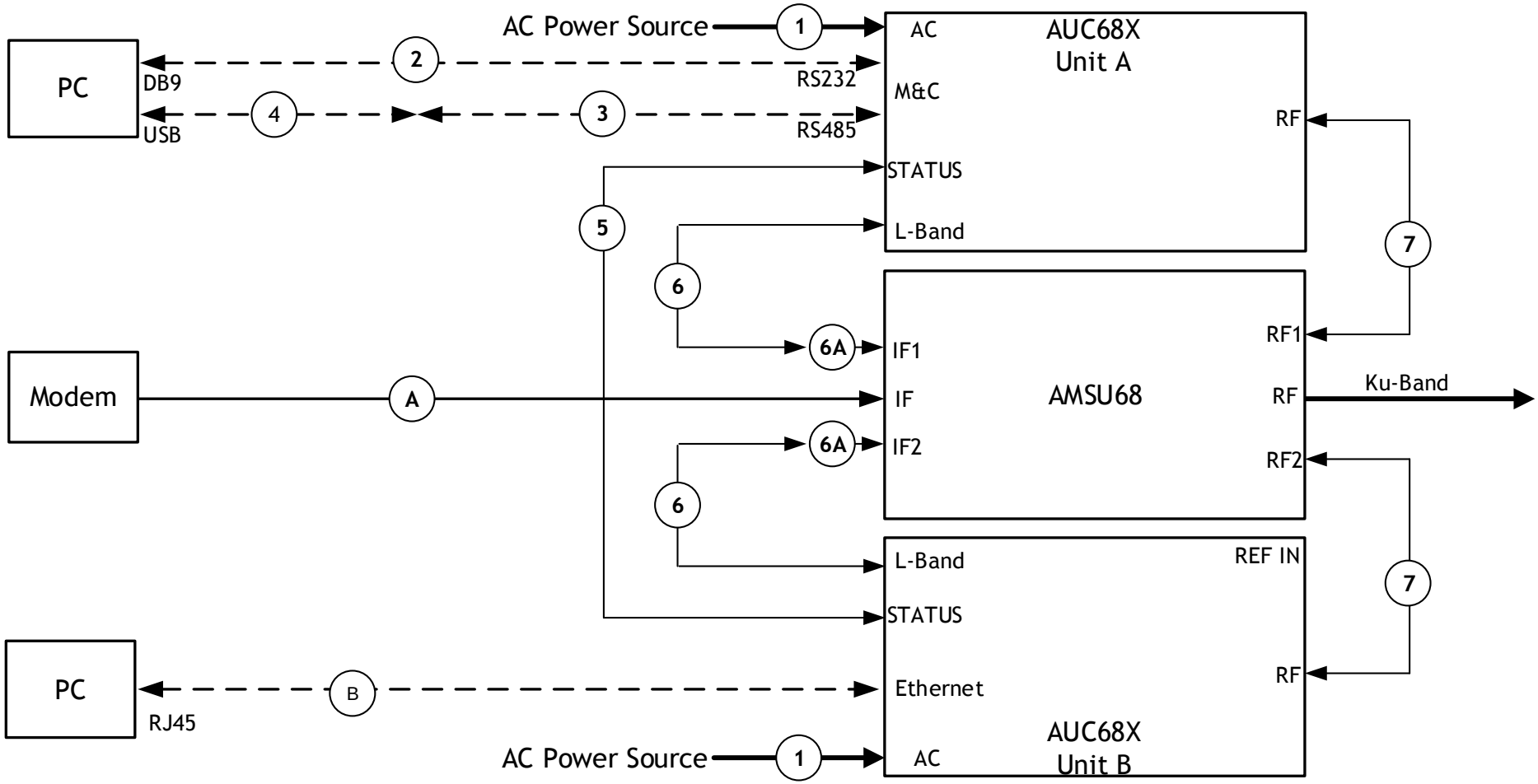
Agilis Part No.	Description	Quantity
AUC68XXXXX-RM	AUC68X Converter	1

Note: These tables list the typical accessories for this setup. Depending on your purchase order, your AUC package may not include certain optional items. Please contact Agilis if you wish to purchase any of the accessories.

LIST OF ACCESSORIES

Item No.	Agilis Part No.	Description	Length (m)	Quantity
1	6202040064G	C/A POWER CORD IEC SOCKET/13A BLACK (LF)	1	1
2	6202040065	C/A 9P D-SUB/M TO 9P D-SUB/F 3M (optional)	2	1
3	2502040680	C/A FOR USB TO RS485 CONVERTER KIT (optional)	-	1
4	6103480008	Converter RS485 to USB (optional)	-	1
5	-	Ethernet RJ45 cable	To be arranged by customer	
A	-	RF cable		

AUC68X 1:1 Redundancy System Configuration



List of System Components

Agilis Part No.	Description	Quantity
AUC68XXXXXX-RM	AUC68 Converter	2
AMSU6812ABSN-RM	Ku-Band Multi Switch Unit	1

📖 Note: The table contain typical accessories list for the Converter. Depending on your purchase order, your Converter package may not include certain optional cables. Please contact Agilis if you wish to purchase any of the above accessories.

List of Accessories

Item No.	Agilis Part No.	Description	Length (m)	Qty
1	6202040064G	Power Supply Cable	1	2
2	6202040065	C/A 9P D-SUB/M TO 9P D-SUB/F	3	1
3	2502040680	C/A FOR USB TO RS485 CONVERTER KIT (optional)	-	1
4	6103480008	Converter RS485 to USB (optional)	-	1
5	2502041031	C/A RS232 DB9 (female to female)	-	1
6	2502041019	C/A N-type male to SMA male	-	2
6A	5703660011	Adaptor N-type male to SMA female	-	2
7	2502040892	C/A Splitter to PM Ku-Bd 80W	-	2
A	-	RF Cable	To be arranged by customer	
B	-	Ethernet RJ45 Cable		